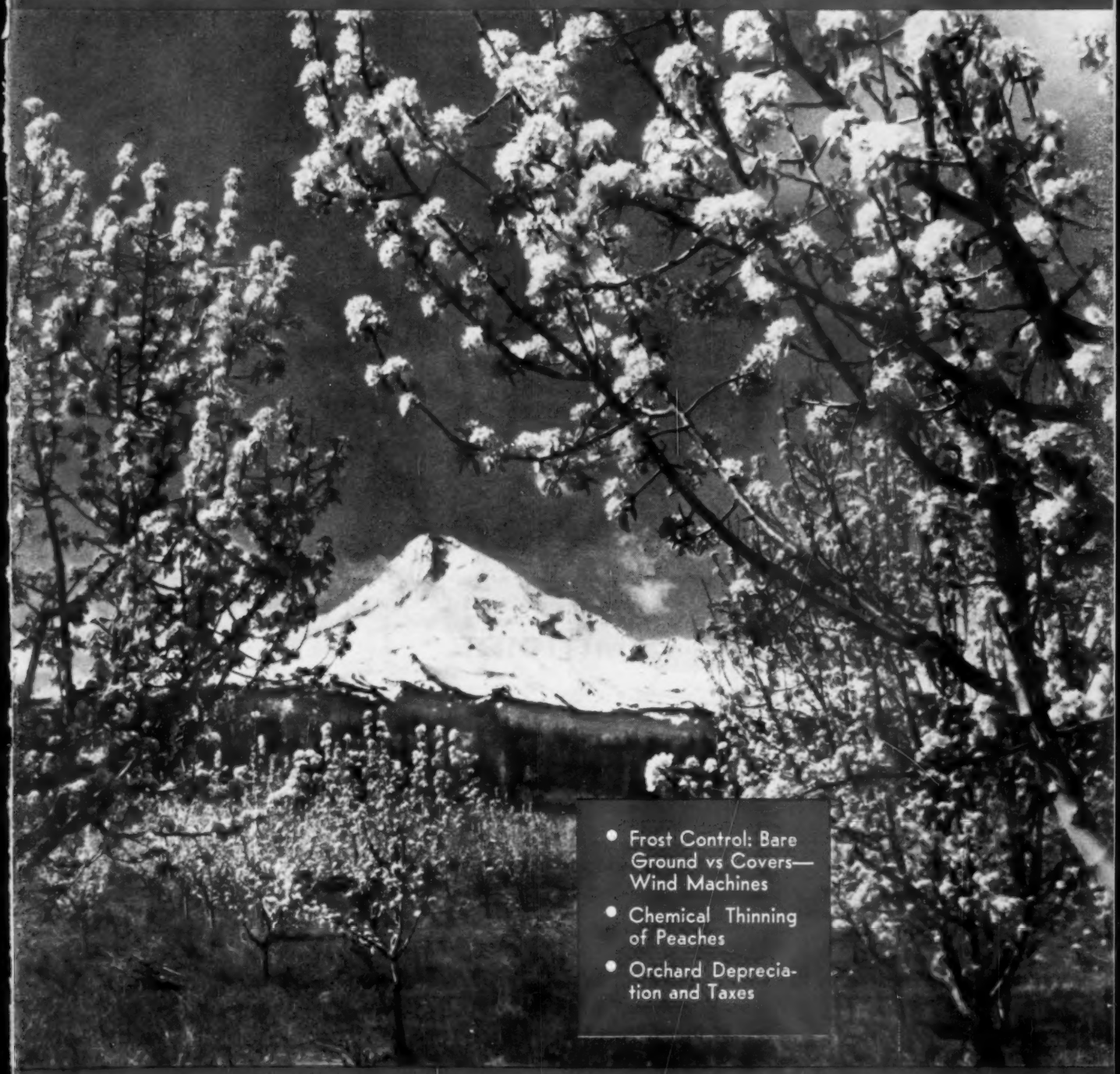
WESTERN EDITION
MARCH • 1958

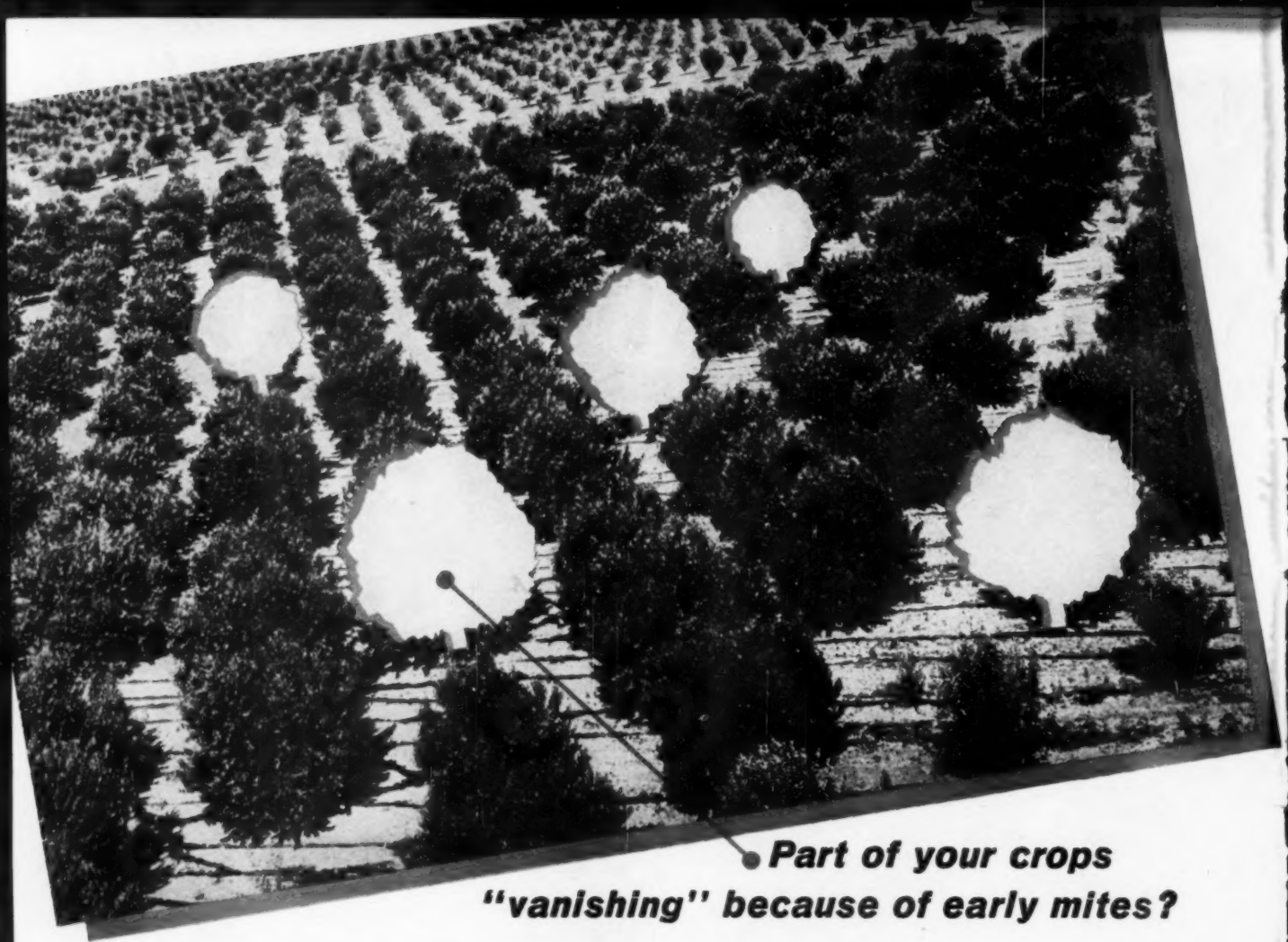
American Fruit Grower



- Frost Control: Bare Ground vs Covers—Wind Machines
- Chemical Thinning of Peaches
- Orchard Depreciation and Taxes

Spring Frosts Scheduled for Your Area?

See the Krick Forecast on Page 12



Part of your crops "vanishing" because of early mites?

ORCHARD® BRAND GENITE® EM-923

Plugs the holes in your profits!

AMAZING "SURE-SHOT" MITICIDE

No Guesswork—Proved! GENITE EM-923 is far superior to any other method of dealing with early mite problems. Thousands of growers from coast to coast swear by it and will accept no substitutes! *That* kind of loyalty has to be *earned* and GENITE EM-923 has done this—on apples, peaches, pears, plums, and prunes.

Powerful! GENITE EM-923 gives control far into the summer. You get effective, long-lasting control of European red mite and clover (brown almond or bryobia) mite. You need fewer mid-summer sprays... reduce residue problems of late season sprays. GENITE is virtually non-toxic to bees and other useful insects—doesn't upset nature's balance.

Prove It to Yourself! You'll never know what a tremendous difference GENITE EM-923 can make until you *try* it. Make *this* year's crop the one on which you start with GENITE EM-923, the "Sure-Shot" miticide. Recommended use is from pre-pink to full bloom. See your friendly Orchard Brand dealer right away, to make sure you have an ample supply.

ORCHARD BRAND SPRAYS + DUSTS

GENERAL CHEMICAL DIVISION

Allied Chemical & Dye Corporation

40 Rector Street, New York 6, N. Y.

Serving Agriculture from Coast to Coast

GC Allied Chemical

"WE'RE FOR FIRESTONES 100% ...HAVE BEEN SINCE 1929"

Here Bruce Lackey (right), Firestone tire expert in Phoenix, and Mr. Libby discuss the famous tread design that makes Firestones take hold like no other tires.

...says Scott L. Libby, General Manager, Waddell Ranch Co., Waddell, Arizona

"Tractors, trucks and cars—it's Firestone tires on our ranch, all across the board," Mr. Libby reports. "That's the way we like it and that's the way we'll keep it. After all, it's only common sense to stay with products that consistently produce for you like Firestones.

"With Firestones on our tractors, we know we can count on *both* extra traction and exceptional wear. Lots of tire makes have been tried around this part of Arizona. We've never heard of any tire that can do the work or stand up to our abrasive sandy loam like Firestones—especially in summer heat. We use Firestones 100%."

Make it a point to contact your Firestone Dealer or Store this week. That's the place to go for all your tire needs. And while you're there, get full facts about Firestone's free loaner service. Should you ever require it, your Firestone Dealer or Store will gladly loan you brand-new Firestones to use while your tires are being repaired or retreaded.

ALWAYS A YEAR TO PAY

Firestone

BETTER RUBBER FROM START TO FINISH

Enjoy the Voice of Firestone on ABC television every Monday evening.

Copyright 1958, The Firestone Tire & Rubber Company

Entered as second-class matter at Post Office at Willoughby, Ohio, under the Act of March 3, 1879. Additional entry at Mount Morris, Illinois.

NOW! A LOW COST ORCHARD DUSTER

New BEAN-NIAGARA Cropmaster announced by John BEAN

thorough, controlled coverage · simple to operate · rugged, compact, lightweight

You get all these BIG features: 60 lb. hopper capacity • Properly designed, flexible 3" discharge outlet • Rugged welded sheet steel body, mounted on steel frame • Box-type fan runner construction reduced air friction • Powerful 12" fan and feed shaft insures proper coverage and even dust distribution • Skid-mounted, engine powered • Alemite lubrication system throughout • Working parts readily accessible for servicing

Up to 200 lb. hopper capacity • Power take off driven, tractor mounted with 3-point hitch • 180° blower head rotation for either side discharge, correct angle adjustment • Uniform, positive feed control • dual mechanical hopper agitation • Feed rate adjustable from tractor seat

SEE YOUR JOHN BEAN DEALER

Write today for more details

fmc John BEAN

LANSING 4, MICH. SAN JOSE 1, CALIF.

Division of Food Machinery and Chemical Corporation

American Fruit Grower

Cover photograph, by Gifford Photos, shows an apple orchard in bloom in the Hood River Valley of Oregon, with snow-capped Mt. Hood in the distance.

VOL. 78 MARCH, 1958 No. 3

FEATURES

Depreciation on Orchards 6
By Lawrence D. Rhoades
Frost Hazard . . . and Cover Crops 11
By P. D. Peterson
Spring Frosts . . . the Orchard's Nemesis 12
By Irving P. Krick Associates, Inc.
"The Apples with Character" 14
A B C of Proposed New Grades for Apples for Processing 15
By Wesley P. Judkins, Joseph M. Johnson, Anthony Lopez, C. B. Wood, and R. E. Moser

APPLES
New Varieties 58
By L. G. Klein

BERRIES
Bare Ground and Frosts in Strawberries 28
New Jersey's Jerseybelle 28
Disease Control 28

CHERRIES
Wind Machines 46
By Clarence C. Mullett

CITRUS
Out in Seconds! 29
By William Fitchen

GRAPES
Raising Sugar Content 22
By James M. Beattie
New Pie Filling 24

NUTS
Chinese Chestnuts 24
By William Weaver

PEACHES
Chemical Thinning 50
By C. L. Burkholder
Finders Keepers? 52
By Sidney A. Diamond

PEARS
Loving Care 54
By C. B. Cordy

PLUMS & PRUNES
Worth Trying 46

DEPARTMENTS

Letters to the Editor 7
State News 16
Fruit Pest Handbook 16
Calendar of Coming Meetings 19
Windfalls 32
Selling the Crop 40
The Question Box 44
New for You 56
Editorials 68
Fruit Talk 68
Coming Next Month 68
Fruit Growing is Such Fun! 68

E. G. K. MEISTER, *Publisher*
RICHARD T. MEISTER, *Editor*
Managing Editor, E. K. GOULD, *Associate Editors:* H. B. TUKEY, ELDON S. BANTA. *Art Director*, GEORGE M. ROSS. *Production Manager*, J. S. BENDER.
EDWARD L. MEISTER, *Director of Advertising*

District Advertising Offices

NEW YORK: W. J. Martin and Company, 185 Madison Ave. Phone—Murray Hill 3-2865.
NEW JERSEY: W. J. Martin and Company, 612 Bernita St., Rivervale (Westwood P.O.). Phone—Parkridge 6-1595.
CHICAGO: Peck and Billingslea, Inc., 185 N. Wabash. Phone—Dearborn 2-0292.
LOS ANGELES: McDonald-Thompson, 3727 West 6th St. Phone—Dunkirk 7-5391.
SAN FRANCISCO: McDonald-Thompson, 625 Market St. Phone—Yukon 6-0647.
SEATTLE: McDonald-Thompson, 1008 Western Ave. Phone—Elliot 3767.

AMERICAN FRUIT GROWER is published by American Fruit Grower Publishing Co., Willoughby, Ohio. E. G. K. Meister, Publisher and Chairman of the Board; Edward L. Meister, President; Richard T. Meister, General Manager; Gilbert Meister, Vice-President. Subscription price $1.00 per year in U.S. and possessions; to Canada and other foreign countries $1.50. Single current copies 25c; copies over one year old 75c.

When changing your address, please send us old as well as new; send address label from your last copy; allow 5 weeks for the first copy to reach your new address.

Postmaster: Please send change of address "Form 3579" to AMERICAN FRUIT GROWER, Willoughby, Ohio.

Look for this nearby Goodyear dealer sign for better tire values—better tire care. Convenient credit terms.

Goodyear Announces

World's newest, workin'est tractor tire—and it's angle-engineered!

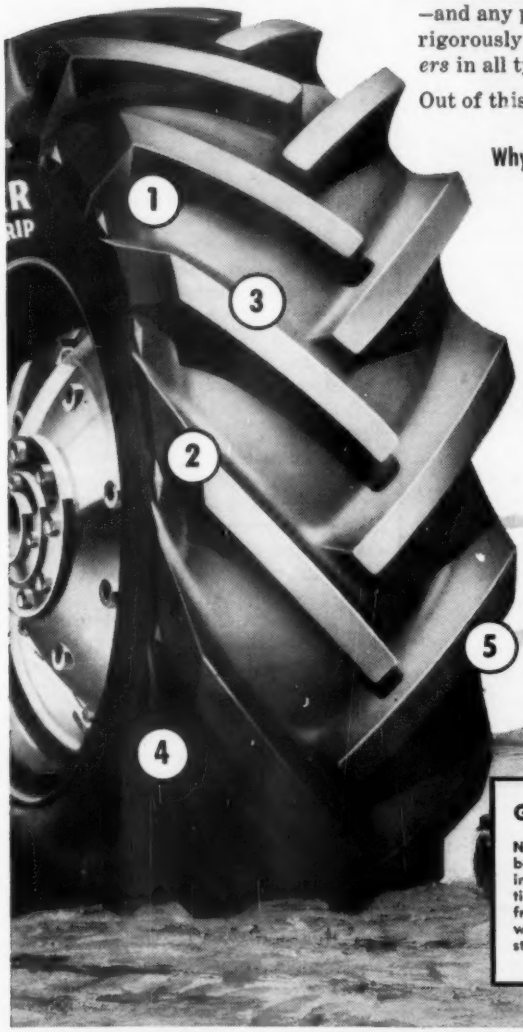
Goodyear's all-new **TRACTION SURE-GRIP** gives you the most powerful traction and longest wear that money can buy!

Goodyear's Farm Tire leadership is based on finding ways to improve even *the best.*

So Goodyear engineers studied their finest tractor tires—inside and out—and any possible improvement was rigorously tested by *practical farmers* in all types of fields.

Out of this continuing trial and test, came the all-new TRACTION SURE-GRIP! It *begins* where the best of the past leaves off—gives you the most powerful traction and longest wear money can buy!

Price? No more than tires it outdates! See your helpful Goodyear dealer. Goodyear, Farm Tire Dept., Akron 16, Ohio.



Why New Traction Sure-Grip Brings You More Traction and Longer Wear:

1. **Lugs up to 20% deeper at the shoulder** — Angle-Engineered for bigger bites between lugs and longer-lasting traction.
2. **Double-action lugs**—Angle-Engineering gives leading edges sharper bite; *swept-back* trailing edges give better clean-out action, protect furrows and add to lug life.
3. **Longer, tapered, ruler-straight lugs** — Angle-Engineered straight-edge does more work, avoids scuffing. New tapered shape gives superior vise-like action.
4. **Broader, deeper shoulders** — Angle-Engineered for greater soil penetration and to protect against radial cracks and tough going.
5. **More muscle all over**—Angle-Engineered to give extra traction, longer wear—even on today's bigger, higher-powered tractors.

ANGLE-ENGINEERED means that the deep, rugged, ruler-straight lugs are scientifically angled to bite in, grip, PULL and come out cleaner. From bead to tread this tire is engineered to make its extra advantages last extra long.

Great New 3-Rib Front Tractor Tire!

NEW SUPER-RIB has wide, sturdy center rib for better straight-line steering—and to end soil-packing problems. Flanking ribs assure superior flotation and easier rolling. New *Rim Shield* protects from sticks and stones. Smooth shoulders and sidewalls glide past stubble. New 3-T Cord body is strongest ever!

60 Years

Sure-Grip—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

Buy and Specify

GOODYEAR *New* Traction Sure-Grip

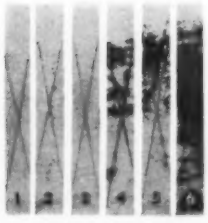
MORE FARMERS PREFER GOODYEAR TRACTOR TIRES THAN ANY OTHER KIND!

MYERS Bigger Spray Tank SAVES TIME

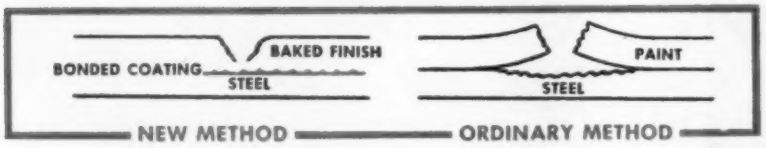
The big 500-gallon tank featured on Myers Air Sprayers permits longer continuous spraying . . . fewer stops a day to cover your orchard.

And these time savings are compounded by labor economies. The Myers requires only one man, while dilute gun rigs need at least two men. Add labor savings and time savings together to come up with more profit per acre with a Myers Air Blast Sprayer.

NEW COATING PROTECTS TANK LIFE



A new Myers tank coating prevents tank paint peeling and flaking. Test panels 1, 2 and 3 (left) received the new bonded coating; panels 4, 5 and 6 received ordinary treatment. All panels were scratched and immersed in strong solvent present in spray mixtures. Result: after several weeks, panels 1, 2 and 3 lost no paint; others were stripped nearly bare.



SEE YOUR MYERS SPRAYER DEALER SOON

Myers® POWER SPRAYERS AND IRRIGATION PUMPS

THE F. E. MYERS & BRO. CO.
8203 Orange Street
Ashland, Ohio • Kitchener, Canada

For tax purposes here's how to handle

Depreciation On Orchards

THERE are three definite periods in the life of a farm, orchard, or vineyard: preparatory period; development period; productive period.

Preparatory Period—In this period expenditures *may not* be deducted as farm operating expense but *must be* treated as capital expenditures. Some typical expenditures, which also include material and labor costs, are:

Clearing brush, trees, and stumps; trees and vines and their planting; installing drain tile and permanent irrigation.

Development Period—During this period you may capitalize your expenditures which are required by current operations, *or* you may deduct them as current expense. Some expenditures are cost of upkeep, taxes, water for irrigation, fertilizer, controlling undergrowth, and cultivating and spraying of trees.

Productive Period—In this period, when trees or vines are bearing, ordinary and necessary expenses *cannot* be capitalized. When the orchard or vineyard reaches the productive period, these expenses are deducted each year.

Depreciation on commercial orchards and vineyards (investment in trees or vines aside from the bare land) is allowed upon reaching producing age if on a reasonable basis.

If an orchard or vineyard has been grown by the present owner and the costs deducted on previous income tax returns as annual operating expenses, then depreciation cannot be justified because the costs have already been charged off once.

If a bearing orchard or vineyard is purchased, the new owner may start taking depreciation on its cost to him. In this case the cost of trees or vines and the land itself must be separated. One way would be to value the land itself at the value of similar land not in orchard or vineyard and then apply the balance to the trees or vines as their cost for depreciation purposes.

There are no nationwide or even statewide "official" rates for calculating orchard or vineyard depreciation. The taxpayer should use his best judgment in estimating the probable length of the productive life of his orchard or vineyard.—*Lawrence D. Rhoades, U. of Mass., Amherst.*

LETTERS
TO THE EDITOR

Grapes in South Carolina

Dear Editor:

Greetings from the South Carolina Grape Growers Association! We are subscribers to your magazine and as such presume you would like to know of our new grape program in South Carolina which embodies commercial grape production for all purposes under the E. L. Love original one-wire system.

The crop is supported by one No. 10 smooth galvanized wire which is stapled on top of the posts. Posts are set at 16-foot intervals and vines are 8 feet apart in rows 12 feet apart. The 7-foot posts are driven 2 feet into the ground, making the wire 5 feet from the ground.

Baling twine is tied at the ground to old stock of the new vine and brought up and tied to the wire. The young vine climbs the twine to the wire quickly in the spring and is pinched off at the wire, which makes the vine fork and grow in opposite directions. This makes only one trunk extending from ground to wire.

An acre like this costs the grower on an average of $250.00 which is generally made back by the crop produced the second year after the vineyard is planted. At least 75% of our grapes have been sold at an average of $250.00 per ton to carlot buyers for chain grocery stores and to independent truckers from out of state.

An acre generally produces about 1 ton of marketable grapes the second year after planting, 4 to 4½ tons the third year, and 6 to 8 tons the fourth year. Our vineyards run from 1 to 10 acres to the grower. The varieties we grow are Concord, Niagara, and Fredonia, all good for any purpose. We have about 750 acres planted. The first plantings were made in the winter of 1951.

Spartanburg, S. C. E. L. Love

Too Glowing

Dear Editor:

A recent article on storage of fruits following radiation painted a rather glowing picture of future possibilities. Several growers have asked me after reading the article if cold storage would soon be a thing of the past.

Frankly, I thought the article was far too optimistic as far as fruit preservation in the fresh state is concerned. The sterilizing effect of something like gamma radiation is pretty well established. Sprout inhibition on potatoes and onions has been pretty well proven.

My reaction is that slowing down respiration and hence lengthening storage life by radiation alone is far from proven for fruits. Improved techniques of radiation in the future may show us how to do just that. For two seasons we worked on gamma radiation on apples and we found either harm or no commercially significant benefits.

Ithaca, N.Y. R. M. Smock

Dr. Smock is one of the country's leading experts on storage of apples and pears. At the department of pomology, Cornell University, he has led the way in this country with controlled-atmosphere storage of apples. He recently received the award of merit from the New York State Horticultural Society for his storage work.—Ed.

Attention!

APPLE GROWERS

AS SURE AS SPRING—THERE WILL BE MILLIONS OF APPLE SCAB SPORES IN YOUR ORCHARDS THIS SEASON.

Kill Them with *Phix*.. Before They Eat Your Profits Away

COMPARE ON ANY BASIS YOU WISH SEE WHY MORE GROWERS INSIST ON PHIX

THROUGHOUT THE APPLE GROWING STATES, PHIX has been proven and recommended by Experiment Station scientists, and is the CHOICE of thousands of successful commercial apple growers.

WHY? BECAUSE ONLY PHIX HAS ALL THESE ADVANTAGES:

- **Gives you reliable, spore-killing, kick-back fungicidal action.**
- **A dry organic mercury fungicide.**
- **Economical and easy to use.**
- **Non-breakable, non-shattering, convenient size packages.**
- **Cannot freeze or form a sludge.**
- **Unlimited shelf life.**
- **Makes spraying effectiveness more certain by mixing instantly with water.**
- **Protects your trees.**
- **Mild action, greatest margin of safety, and widest range of compatibility.**

NOW AVAILABLE IN BOTH THE REGULAR 1 LB. CAN, AND IN A NEW 1¼ LB. CAN CUSTOM DESIGNED FOR 500 GAL. SPRAYERS TO ELIMINATE ALL MEASURING.

Order **PHIX** from your dealer early. Insist on **PHIX—GET THE MOST FOR YOUR MONEY. REMEMBER—IT PAYS MORE WAYS, WHEN YOU USE PHIX.** If your dealer does not have it, write, wire or phone your order to us with your supplier's name.

Attention!

STRAWBERRY GROWERS

LEAF BLIGHT AND STEM-END FRUIT ROT DISEASES CAN CAUSE ENORMOUS CROP LOSSES ON SUSCEPTIBLE VARIETIES.

AN EARLY SPRAY WITH PHIX IS THE **MOST IMPORTANT** AND MOST EFFECTIVE SINGLE CONTROL MEASURE AVAILABLE FOR KILLING THESE DISEASE ORGANISMS — PROVED IN EXPERIMENT STATION TESTS ASK YOUR DEALER FOR PHIX.

Free leaflet available describing these diseases

CHEMLEY PRODUCTS COMPANY
5744 N. Western Avenue
Chicago 45, Illinois

International is a one-word promise that a truck can do its job.

A promise kept for 51 years.

Now, in fast-moving 1958, International also means a fresh, original expression of *color*, *style*, *power*, and *comfort* you have to see in person to believe.

NO OTHER TRUCKS LINE UP... MEASURE UP... STAND UP... LIKE INTERNATIONALS

* More models, power choices and "tailored-for-you" features than any other make.
* First choice of professional truck operators, who must have superb quality and who measure costs to the penny.
* Every part designed to do a truck's job. It's truck quality, pure and simple, that keeps an INTERNATIONAL going – longer – at least cost to you.

INTERNATIONAL HARVESTER COMPANY • CHICAGO
Motor Trucks • Crawler Tractors
Construction Equipment • McCormick ®
Farm Equipment and Farmall ® Tractors

This custom pickup is one of 10 INTERNATIONAL models with bonus loadspace bodies up to 8½ ft. long and with plenty of bumper clearance for field work. See it now at your INTERNATIONAL Dealer's.

INTERNATIONAL TRUCKS cost least to own!

Here's how you can grow more... U.S. fancy ...

Pack new color, new firmness, new quality into your fruit. Grow for U.S. Fancy grade with mixed fertilizer containing **K-plus** sulphate of potash. Fruit trees pack in extra nutrients with the help of **K-plus** sulphate of potash. Where other forms of potash add chloride, **K-plus** supplies *sulphate* plant food. Excessive chloride adds water to fruit and may inhibit nutrient uptake, while sulphur or sulphate is essential for plant growth. That's why **K-plus**—the quality sulphate form of potash—helps you grow high yields of quality fruit. With **K-plus**, you can expect more trees to respond with yields of the flavor, color, and size that grade U.S. Fancy. Trees can be healthy, fruit more firm. Fruit can hold quality better during storage and shipping. Ask your dealer for mixed fertilizer with **K-plus** sulphate of potash.

K-plus*

potassium sulphate (K_2SO_4)

see how K-plus goes to work for you →

*TRADE MARK—I. M. C. BRAND OF SULPHATE OF POTASH

HERE'S HOW K-plus BUILDS HIGH QUALITY FRUIT

Like a good foreman on any building job, **K-plus** potash supervises other nutrient elements . . . performs the function of a catalyst.

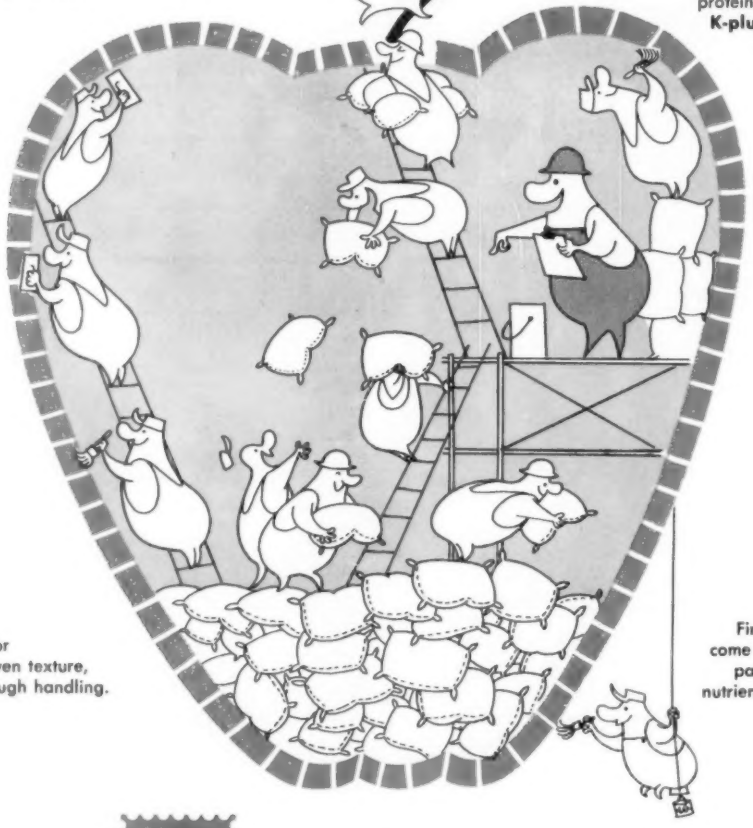
This results in a nutrient production team fully equipped to grow quality fruit for top market prices—without excess chloride damage.

The production team moves quickly to food-factories in tree leaves, begins making sugar, proteins, vitamins, enzymes, and cellulose.

Then **K-plus** sulphate of potash helps rush carbohydrate raw materials to the fruit, so construction can go ahead at top speed.

Those extra carbohydrates and proteins—made with the help of **K-plus** sulphate of potash—are packed tightly into fruit for Fancy flavor.

Healthy skin and storage tissue, nourished by the nutrient production team, help make fruit disease-resistant, help protect it against bruises.



And vitamins and enzymes, made with **K-plus** help, are added too. All these help give you more fruit that grades U.S. Fancy.

Cellulose is packed in for crispness, smooth and even texture, and strength to resist rough handling.

Finally, top grade color can come naturally to healthy fruit, packed full of the important nutrients which **K-plus** sulphate of potash helps supply.

Specify K-plus sulphate of potash in your mixed fertilizer... grow more U.S. Fancy fruit

INTERNATIONAL MINERALS & CHEMICAL CORPORATION

POTASH DIVISION . . . . . 20 N. WACKER DRIVE, CHICAGO 6, ILL.

American Fruit Grower
• Fruit for Health •

A good cover . . . but it could help Jack Frost.

FROST HAZARD... and Cover Crops

Blanketing the ground with heavy covers may be the reason your orchard suffers from spring frost damage. The bare ground method may help you check Jack Frost's activities

By P. D. PETERSON
Stauffer Chemical Company

BACK in the late 1930's and early 1940's the Eastern Shore of Maryland was plagued, year after year, with heavy frosts during and following bloom; frosts that all too frequently took the entire crop or thinned it down so much that it did not pay to spray what was left. Brown rot, Oriental fruit moth, and curculio found this much to their liking.

Nothing was done about the problem until 1947 except to blame the weather. In 1947, the frost arrived a few days later than usual, on May 9, 10, and 11. I happened to be in Salisbury, Md., at the time running some spray tests with BHC on peaches in the W. F. Allen Company orchards. Peaches were in the early shuck-off period. A luxuriant cover crop of rye was just being disked down in the peach orchards when the frost hit.

Each morning during the frost we broke open young peach fruits to assess the extent of the damage. Ice crystals could be found in most of them. Several weeks later I made a tour of the orchard in company with W. Lee Allen, Dr. W. W. "Bill" Aldrich, and others. It was a disheartening sight. The crop was a total loss. There were minor but interesting exceptions to this generalization. The exceptions are my reasons for writing this article.

In areas where the cover crop had just been disked down ahead of the frost we could find no peaches. In areas where rye was still standing at the time of the frost we could find a few misshapen peaches. Wherever a dirt service road led out alongside an orchard we found peaches, more in the first three rows next to the dirt road than in the balance of the orchard. And, quite significantly, most of these fruits were on the side of the trees facing the road—about three times as many on the branches hanging over the road as on the far side of the same trees.

A similar frost damage effect was found on apples. Fortunately for the record, the Allens had three blocks of Jonathan, identical except in one respect. In two of the blocks the soil was covered by a heavy sod; in one of them the soil was bare and hard. In the two sod blocks, the only apples that survived the frost were in the top few feet of the trees; in the adjacent bare ground block, a nice crop had been set from top to bottom of each tree.

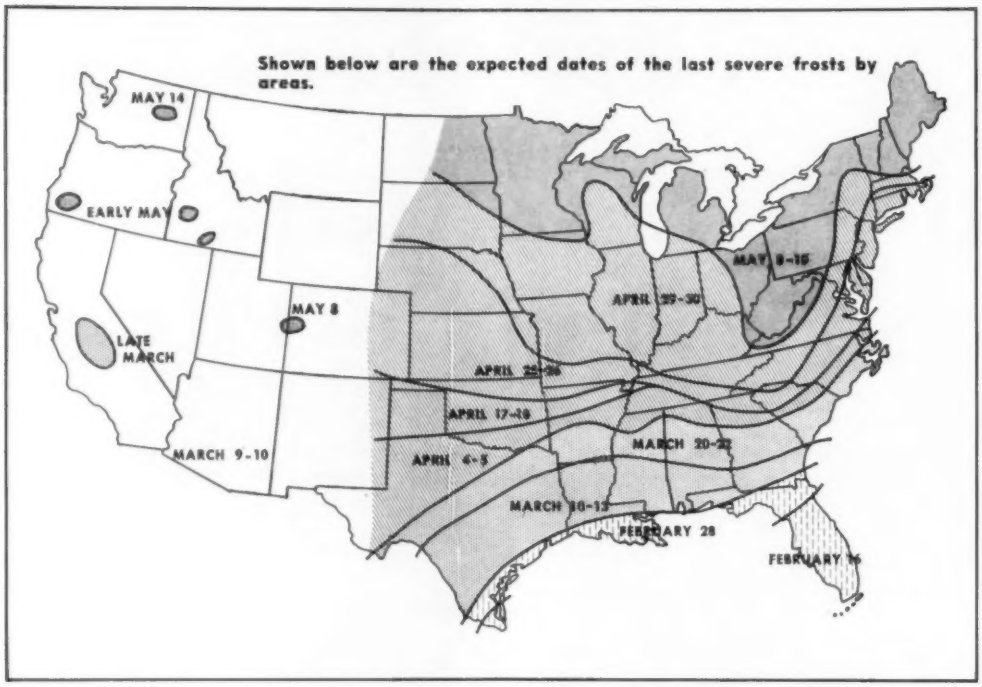
It was easy to conclude from these observations that the temperature of the fruit had not dropped so low over hard, bare ground as it had where the ground had been freshly stirred or where it had been blanketed with a heavy cover of rye or grass. Apparently the hard, bare ground absorbed more heat from the sun during the day and, by the same token, radiated more heat to the fruit at night.

We found other substantiating evidence. The rye cover crop had failed to come up in one large block of peaches. The ground in this block was bare and hard when the frost hit. In spite of the frost, this block set a commercial crop of fruit.

(*Continued on page* 55)

SPRING FROSTS

Danger spots this spring center around the New England regions and the Great Lakes District



THE perennial "last frost" date over most sections of the United States is expected to show a general tendency towards a later-than-usual occurrence this spring. Fruit growers over the nation should note these important springtime weather characteristics: The most critical regions will be in the apple producing districts of New York and the New England states. An unfortunate combination of slightly above normal temperatures and adequate moisture are expected to start the trees to budding a little earlier than usual, while the last frost of the year is expected to be a week to 10 days later than normal. Elsewhere, almost all of the country east of the Rockies can expect a later than usual frost this spring. But, in those same areas the budding should be a little later than normal, producing an extremely critical situation.

WEATHER TIPS ON SITE SELECTION: If you are planning to enlarge your orchards this year, it makes good sense to consider, in the beginning, the advantages of terrain as a weapon against frost damage in the future.

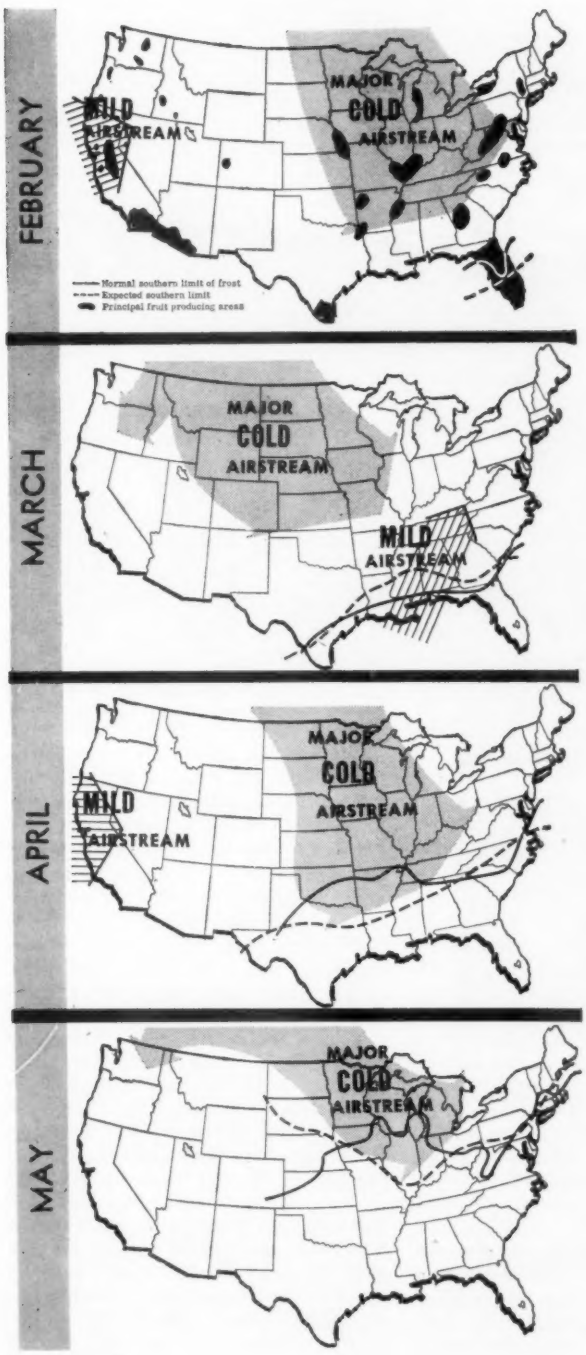
It is well recognized and has been demonstrated many times that an orchard planted on a gently sloping hillside receives less frost damage than one planted in a valley. On a clear, cold night, the air in the lower levels of the atmosphere is cooled by contact with the cooling earth. Since this cool air is more dense and heavier than the warmer air above it, it begins to slowly flow downhill in much the same manner as water. Also, being more dense than warm air, it has a tendency to underride the warmer air and to collect in pools in the low spots. There are instances of record where the temperature at the bottom of a hill was more than 25 degrees colder than temperatures a little more than 200 feet up the hillside.

Another frost protection practice about which there has been some controversy is that of planting a cover crop. A recent series of experiments (Wisconsin) demonstrated that bare ground had a minimum temperature several degrees warmer than ground under a cover crop and located only a few feet away. This fact is due primarily to the cover crop shading the ground during the day, thus slowing the rate of absorption of heat the ground receives from the sun. Then, at night, the cover acts as an insulator or blanket, retaining the heat in the ground and preventing it from warming the lower levels of the overhanging air.

Editor's Note: Several articles in this issue bear out the above statement that spring frosts are likely to cause greater damage in cover cropped or mulched fruit plantings than in plantings where no soil cover permits the sun's rays to penetrate the bare ground.

By IRVING P. KRICK ASSOCIATES, INC.

. . . the orchard's nemesis



As we have experienced already, frequent penetrations of cold air will continue through the regions east of the Rockies. On the West Coast, a general flow of mild Pacific air should keep the morning temperatures slightly above the seasonal normal. The southern limit of the frost regions will extend southward through central Florida with almost all of the fruit producing regions receiving frost at intervals this month.

Cold outbreaks are expected to shift a little more to the West and will include the Rocky Mountain states as well as the Pacific Northwest. Along the Gulf Coast, the prevailing air flow should bring warmer than normal temperatures into the extreme southern portions of the country. By late March, most of the Gulf states will be finished with the frost threat for the season. In California, several cool mornings are expected to bring freezing or near freezing temperatures extending into late March.

A continued flow of mild Pacific air onto the West Coast is expected during the month of April. The rest of the country, with the exception of the Eastern Seaboard, will receive several surges of cold air from the Canadian Plains. As late as April 24 or 25, frosty mornings with critical temperatures can be expected through northern Oklahoma, Tennessee, and the Carolinas.

During May the major portion of the colder air will be by-passing the Plains areas of the country as it moves into the eastern and northeastern states. Near freezing early morning temperatures should be expected on occasions throughout the entire month in the Northeast. In contrast, mid-May should see the end of the frost threat for most of the western half of the country.

'The Apples with Character'

That's the slogan of West Virginia's leading grower who prescribes 'condition-control' as the remedy for the nation's apple marketing dilemma

HENRY W. Miller, Jr., vice-president and general manager, Consolidated Orchard Co., Paw Paw, W. Va., is an apple grower who practices what he preaches.

Because of this, Consolidated has successfully standardized the high quality of its extra fancy fresh fruit and proved the tremendous value of "condition-control," a term often used by Miller.

The progressive apple grower and his hundred-man staff have built up export and domestic markets that provide them with good profits, year in and year out—in 1957 the company chalked up nearly $1 million in net sales.

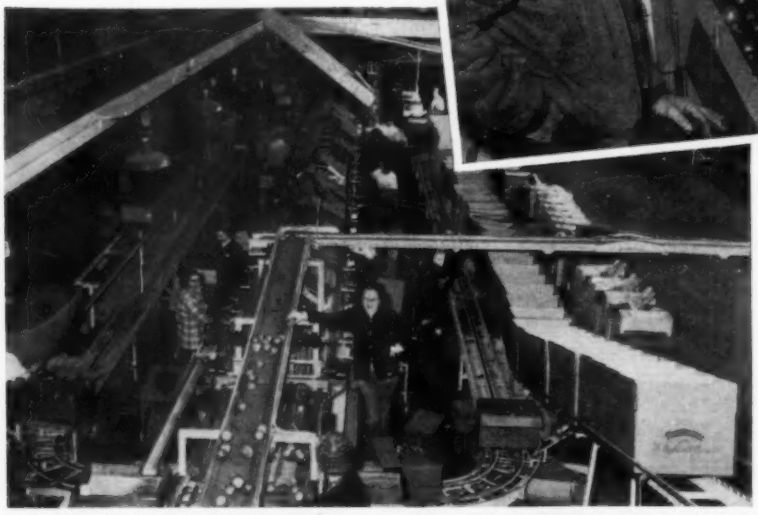
In a recent talk at a New Jersey state apple meeting, Miller pointed out that 1957 will go down in apple history as a tough season, and that many growers are discouraged at the present sluggish demand and low prices. "In fact," Miller reported, "a well-known apple grower recently said our industry is suffering from an incurable economic ailment."

Although Miller agrees that the apple business is "indisposed and in need of a few major operations," he also believes he will never see the day when any of the nation's present growers will serve as active pallbearers for the industry.

"I believe the best years for American apple growers are ahead *if* we are willing and able to adopt some up-to-date methods," Miller states. "Any industry that can commit so many economic sins and still live must have a great future for those with the know-how, faith, and vigor to stay in the game," he declares.

"The reason for most of today's industry troubles can be simply stated in a few words," Miller emphasizes. "The fresh apple is far behind in standardization, better known in other industries as quality control. The term quality-control, as used here, is intended to mean condition-control, and is not to be confused with federal and state grades. Extra fancy and fancy markings and certificates mean little when a shipment of apples arrives in the marketplace out of condition."

Henry W. Miller, Jr., right, and C. L. 'Skip' Gordon, packing superintendent of Consolidated, inspect a box of 'The Apples with Character.'



A stack period in Consolidated's storage and packing plant at Paw Paw, W. Va. Storage capacity at present is 175,000 boxes of aples. Miller plans to build an addition for more than 100,000 bushels which would increase storage capacity to approximately 600 carloads of apples (500 bushels per car). Packing room is designed for year-round operation.

Miller declares that the American housewife was misled in many cases by 1957 chain store advertising of Red Delicious apples at fire sale prices. "The market for one of our finest varieties was smacked below the belt in the first round by Eastern growers who rushed an inferior product that had only begun to look like apples to market to get the big, early money . . . and it was slaughtered in the second round by Northwestern growers who produced far

(*Continued on page* 62)

A B C of Proposed NEW GRADES FOR APPLES for Processing

Three new grades would permit more accurate grading and pricing, give the grower of high grade fruit more money for his crop

By WESLEY P. JUDKINS, JOSEPH M. JOHNSON, ANTHONY LOPEZ, C. B. WOOD, R. E. MOSER
Virginia Polytechnic Institute

DURING recent years apple growers and processors have become increasingly concerned over the wide variations in waste allowed between the present U. S. No. 1 and U. S. No. 2 Grades of Apples for Processing. The U. S. No. 1 provides for a maximum of 5% waste and the U. S. No. 2 allows up to 25% waste in excess of the usual peel, core, and other waste incident to processing the fruit.

A narrower range of allowable waste would provide a basis whereby growers could be paid a price which was more nearly in line with the actual value of the fruit. More precise grades would also help processors determine more accurately the amount and grade of apples needed to maintain their operation at the desired level.

The price which a processor may pay for apples is controlled by the price the housewife is willing to pay for canned applesauce. The processor must consider all of his expenses such as for labor, cans, sugar, storage, sales commissions, and overhead, as well as the price of the apples themselves, in arriving at his total cost.

The price which may be paid for raw apples is usually determined by subtracting all of the expenses of the processing operation, except the cost of the apples, from the estimated selling price of the finished product. It is obvious that the cost of the apples and expenses of the processing operation must be maintained at a level which will allow the canned applesauce to sell at a price which is competitive with other processed fruits and vegetables.

Truckloads of apples lined up for weighing before delivery to canning plant.

Present Grades—The U. S. Standards for Cannery Apples were first established in July, 1930. Two official grades were designated with additional provisions for low grade apples and minimum size. A recent revision is to be found in the *Code of Federal Regulations*, Title 7, Agriculture, Revised 1953. The U. S. Standards for Apples for Processing, as specified in this publication, are as follows:

U. S. No. 1 shall consist of apples of one variety which are not overripe; which are free from decay, worm holes, freezing injury and internal breakdown. The apples shall also be free from any defect which cannot be removed during the usual commercial preparation for use without causing a loss of over 5%, by weight, of the apple in excess of that which would occur if the apple were perfect. (See Minimum Size.)

U. S. No. 2 shall consist of apples of one variety which are not overripe; which are free from freezing injury and internal breakdown. The apples shall also be free from any defect which cannot be removed during the usual commercial preparation for use without causing a loss of over 25%, by weight, of the apple in excess of that which would occur if the apple were perfect. (See Minimum Size.)

Culls shall consist of apples which do not meet the requirements of either of the foregoing grades.

The *minimum size* or range of size may be fixed by agreement between buyer and seller.

(*Continued on page* 64)

State NEWS

- **Virginia Growers Request Increase in State Apple Promotion Tax**
- **Migrant Labor Housing Is Critical Problem in New York**

Ninety-one Exhibitors

NEW YORK—With 91 exhibitors at the trade show in the War Memorial at Rochester, the New York State Horticultural Society held one of its largest and most successful meetings, in combination with the New York State Vegetable Growers Association and the Empire State Potato Club. This is the first time that the fruit growers have met with the vegetable and potato groups.

Ralph Smith, of Poughkeepsie, was elected president of the horticultural society, and Marion I. Johnson, Williamson, vice-president. Dan Dalrymple continues as secretary-treasurer.

The longest resolution passed by the New York growers concerned migrant labor. Growers requested that any changes in the state sanitary code be presented to and discussed with camp owners to make certain that such changes are practical and workable.

They also requested that all proposals of state subsidy by low interest loans for improved housing be thoroughly studied to determine their ultimate effect. The fact should be recognized, it was pointed out, that growers cannot provide modern motels to house seasonal workers during a few weeks of the year, nor can they be expected to provide costly child care centers and educational programs for children of migrant workers.

Another resolution requested that the extension service in winter fruit schools give due consideration to the cost of different sprays and practices in their recommendations to growers.

AWARD OF MERIT

Dr. Robert Smock, department of pomology, Cornell University, was honored with the award of merit by New York State Horticultural Society, in recognition of his work with controlled-atmosphere storage.

Codling Moth Control

PENNSYLVANIA—A 1957 experiment on apples revealed that several insecticides give better control of codling moth than DDT, the standard treatment.

This fact was disclosed by Dean Asquith, entomologist, Pennsylvania State University Research Laboratory in Arendtsville, at the annual meeting of the eastern branch of Entomological Society of America in New York City.

Asquith reported that 2 pounds of 50% DDT per 100 gallons of spray, when combined with the fungicide captan in six cover sprays, gave an average of only 64% control. However, seven new treatments, also combined with captan, controlled this pest at rates ranging from 94 to 99.6%. Insecticides used were: Guthion (Chemagro Corp.), Sevin (Union Carbide Chemicals Co.), Chipman 6199 (Chipman Chemical Co.), Nialate (Niagara Chemical Div., Food Machinery & Chemical Corp.), Phosdrin (Shell Chemical Corp.) plus DDT, Guthion plus DDT, and Guthion plus TDE.

PRUNING DEMONSTRATION

Kentucky's annual peach pruning session is scheduled for March 21 at Kentucky Cardinal Orchards, Henderson. Frank Street, the host, will serve lunch at noon. As in past years, growers from several midwestern states are expected. The outdoor demonstration will be held regardless of weather conditions.—W. D. Armstrong, Western Kentucky Exp. Substation, Princeton.

Asquith expressed the opinion that several of the new insecticides will be used extensively for codling moth control within the next year or two. However, at present, he thinks Guthion is the only one with enough background to justify large scale commercial application for this purpose. The U.S. Food and Drug Administration has established a residue tolerance of 2 parts per million of Guthion on apples and has set the requirement of a 15-day interval between the last application and harvest.

New Strawberry

LOUISIANA—Headliner, a new strawberry variety developed by Louisiana State University Agricultural Experiment Station, produces fruit 30 to 50% larger than older commercial varieties in the state.

Plants are vigorous, large-crowned, with dark green leaves. The early-fruiting variety is highly productive, and the bright red color is attractive for fresh market. It is also superior for processing. Shipping tests show that the berries arrive on the market in good condition.

More information may be obtained by writing for Circular No. 50, from Louisiana Agricultural Experiment Station, Baton Rouge.

Request Increase in Apple Tax

VIRGINIA—Apple growers at the recent annual meeting of Virginia State Horticultural Society took steps toward providing increased funds to the Virginia State Apple Commission for an aggressive program of promotion and research. They requested the introduction of legislation during the 1958 regular session of the Virginia General Assembly which would increase the present tax of 1½ cents to 4 cents per bushel. The tax would apply on all apples grown in the state which are graded and sold for fresh consumption.

The group also urged enactment of a new law to levy a tax of 2 cents per crate

FRUIT PEST HANDBOOK

(SIXTY-SECOND OF A SERIES)

FRUIT TREE LEAF ROLLER

THE insect known as the fruit tree leaf roller feeds on the fruit and foliage of apple and other deciduous fruits in the northern half of the United States and in Canada. The small, light green caterpillars with black heads appear on the trees about the time the buds are unfolding, webbing together and feeding on the leaves and blossom buds. Normal blooming of blossom buds may be prevented and many blooms destroyed.

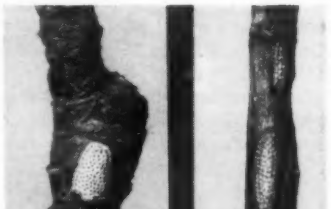
As the caterpillars continue to feed they roll up and web one or more large leaves about a fruit cluster and eat irregular holes in the fruit and foliage. Badly damaged fruits drop while lesser damaged ones remain on the tree but bear scarred areas that reduce or destroy their value.

This insect is not regularly a serious pest but appears in numbers for a few years at a time, usually two or three, and then is comparatively scarce and unnoticed for several years before appearing in numbers again.

The fruit tree leaf roller overwinters in the egg stage in inconspicuous grayish or brownish masses of up to 100 eggs or more on twigs, limbs, and trunks of trees. The eggs hatch about the time the buds begin to open and the caterpillars feed for from three to six weeks.

The full-grown caterpillars cocoon and pupate in rolled or folded leaves from which the adults emerge in about 10 to 12 days. Egg laying begins a few days later and is completed in June or early in July. There is but one generation a year.

Control*—Spray the trees with 50% DDT wettable powder, 2 pounds per 100 gallons, at the pink, calyx, or first cover period, or apply a dormant oil spray before the eggs begin to hatch, using 3 gallons of a superior-type oil or 4 or 5 gallons of an ordinary-type dormant oil per 100 gallons.—*Howard Baker, USDA.



Hatched and unhatched egg masses.

Apples injured by fruit tree leaf roller.

Photos courtesy USDA.

Tailor-Made for Fruit!

New Agricultural Grade

Grace Crystal Urea

Fertilizer Compound

low biuret

(Less than 0.2%)

and completely water soluble!

1. Safe! Especially Formulated for Foliar Application.

2. Makes Possible Maximum Yields and Top Quality.

3. Saves Time, Labor, Equipment.

The low biuret content of new Grace Crystal Urea gives you concentrated nitrogen (46%) that's *completely safe* for foliar application.

The nitrogen in Grace Crystal Urea is *immediately* available to plants, and the nitrogen goes to work almost at once. Supplying this *extra* nitrogen in this easy way gives you maximum yields *and* top quality.

Response in terms of improved foliage, color or growth may be seen within a few days after spraying. Even when soil conditions are poor—for example, when there is excessive dryness, wetness, cold, or leaching from heavy rains—response from foliar feeding with Grace Crystal Urea is good—and fast.

Grace Crystal Urea can be added to your regular insecticides or fungicide formulations and sprayed at the same time you apply these materials. You do two jobs at once, which frees men and equipment for other work.

Grace Crystal Urea is compatible with commonly used spray materials. The crystals dissolve readily and completely, won't clog spray hoses, valves or nozzles. Solutions of Grace Crystal Urea are non-corrosive—won't harm rubber, metal or wood.

FOR SOIL APPLICATION use free-flowing Grace Urea Prills. Guaranteed 45% Nitrogen. Ideal for Top-Dressing or Side-Dressing of fruits and vegetables, as well as field crops.

Grace Chemical Company *A Division of W. R. Grace & Co.*

MEMPHIS, TENNESSEE

Swift's Plant Foods trigger new Yield Energy

Fruit crops take on new power to produce when fed with Swift's Plant Foods. The extra growth elements in these Specialized Crop Makers *trigger new yield energy from the soil*... actually make each acre of land worth more to you.

Swift's Plant Foods are made by the exclusive FLO-FUSION process which packs each particle with fertility to assure balanced feeding of your crop. The plant food elements are chemically-hitched so they can't shake out or separate.

There is a Swift's Plant Food that is just right for your crop. Your Swift Agent or Dealer will be glad to help you plan a soil fertility program using **Vigoro Commercial Grower, Brimm, Blenn** or **Red Steer.** Contact your nearest Swift office.

Swift 103RD YEAR

AGRICULTURAL CHEMICAL DIVISION • CHICAGO 9, ILLINOIS

To Serve Your Farm and Family Better

on upgraded bulk fruit for fresh consumption, and 4 cents per cwt. on No. 1 fruit and better for processing.

J. B. Bonham, Sr., of Chilhowie, was reelected president. D. Lyle Miller, Jr., of Washington, and P. H. Girling, of Agricola, were added to the board of directors. Other board members are Fred M. Frederickson, Mt. Jackson; Philip Glaize, Winchester; Dr. W. P. Judkins, A. H. Teske, both of Blacksburg; W. M. Martin, Middlebrook; and E. M. Jones, Washington.—*A. M. Deekens, Ext. Service, Virginia Polytechnic Institute, Blacksburg.*

Name Officers

KENTUCKY—Meeting at Paducah recently, Kentucky State Horticultural Society reelected Boynton Merrill, of Henderson, president. George L. Street, Henderson, and Wendell VanHoose, Tudor Key, were chosen vice-presidents. W. W. Magill, Lexington, was renamed secretary-treasurer.

Spray Conference

OREGON—Sevin and Cyprex are two new chemicals which may come to mean much to orchardists, it was declared at the recent 32nd annual conference of Western Co-operative Spray Project in Portland.

Outstanding control of codling moth, lecanium scale, fruit tree leaf rollers, and the eye-spotted bud moth has been obtained with Sevin, while Cyprex shows much promise against fungus disorders. Sevin also provided good control of pear psylla, green apple aphids, and the geminate leafhopper which spreads Western-X virus.

Guthion is another material ranked high by the experts in fighting the codling moth, Mcdaniel mite, and green apple aphid. A single application of Tedion controlled Mcdaniel mite for an entire season in Utah.

Codling moths have finally moved over into cherries, it was disclosed at the meeting. Cherry fruit fly, which has been a major problem, is not as great a threat as it once was, but scale and other pests are increasing. Protein hydrolyzate baits for cherry fruit fly have not worked as well as hoped.

Dichlone, 1 pound per acre, plus Colloidal Spray Modifier, 1 quart per 100 gallons of water, produced scab-free apples in British Columbia.

Trees and fruit must be protected in advance to ward off fungus troubles, J. R. Kienholz, USDA plant pathologist, declared. Three properly-timed sprays will protect the orchard, while six or seven at the wrong time will not.

Gibberellins have produced virus-free strawberry runners from virus-infected mother plants at Oregon State College, and have permitted cherries to expand without cracking while their red coloring was slowed at Washington State College. Seedless grape production was increased 80% with application of a few grams per acre of gibberellins, James M. Merritt of Rahway, N.J., manager, plant chemicals, Merck & Co., told those gathered for the conference.

Old Man Winter

MASSACHUSETTS—The weather figured prominently in the story of the recent 64th annual meeting of Massachusetts Fruit Growers Association in Worcester. A 13-inch snowfall paralyzed transportation and only a few growers were able to get to the meeting the second day.

Fruit growers met in the Municipal Auditorium during the Massachusetts Food and Farm Fair. A trade show with more than 60 exhibitors added interest to the meeting.

The association met in conjunction with the 110th annual meeting of the American Pomological Society.

Stanley Johnston, well known peach breeder of South Haven, Mich., discussed new peach varieties. He said there is a remarkably strong trend toward planting the more red-colored peach varieties.

He warned growers against putting in large plantings of peach varieties which had been bred in other sections of the country. For instance, West Coast peach varieties usually do not do well in the Northeast and, by the same token, Southern varieties are not adapted to the North.

He told growers about two new peach varieties produced at South Haven Experiment Station: Sunhaven, ripening 10 days before Redhaven, and Richhaven, which ripens with Halehaven.

Leon Havis, in charge of peach research at USDA, Beltsville, Md., spoke on new developments in peach growing.

He said it is possible to prune peach trees up to bloom, but, when pruned after bloom, yields drop off. However, it is better to prune as late as three weeks after bloom than not at all.

On peach thinning. Havis pointed out that growers are learning the characteristics of each variety and adapting their thinning to the particular variety.

New officers of the association are Nathan Chandler, president; Durwood Frost, Arthur Bishop, and Charles A. Dowse, vice-presidents; Arthur P. French, secretary; Frank W. Southwick, treasurer.

Heads Hort Society

TENNESSEE—Henry Levy, of Brownsville, was elected president of Tennessee State Horticultural Society at its recent 52nd annual convention in Chattanooga. Three regional vice-presidents were named: John Morgan, Elizabethton, east Tennessee; William N. Harris, Memphis, west Tennessee; and W. G. Williams, Five Points, middle Tennessee. A. N. Pratt, Nashville, was reelected secretary-treasurer.

CALENDAR OF COMING MEETINGS & EXHIBITS

Mar. 15—Illinois Nut Tree Association 2nd annual meeting, Staley Mfg. Co. Auditorium, 9:30 A.M.—J. C. McDaniel, President, Urbana.

Mar. 18-20—Western Weed Conference, Davenport Hotel, Spokane, Wash.

Mar. 27-28—37th annual Horticultural Short Course, Peters Hall Auditorium, University of Minnesota, St. Paul.—Albert G. Johnson, Research Fellow of Horticulture, University of Minnesota, St. Paul 1.

Apr. 11-18—15th International Horticulture Congress, Nice, France.—P. Chaunier, Sec'y, 84 Rue de Grenelle, Paris, France.

Apr. 24-25—Co-op Managers and Directors Conference, Chinook Hotel, Yakima, Wash.

May 1-2—31st Annual Shenandoah Apple Blossom Festival, Mrs. Jean James Demorest, Publicity Director, Winchester, Va.

May 11-14—Processed Apples Institute, Inc., 7th annual meeting, Seaview Country Club, Absecond, N. J.

May 25-28—Super Market Institute, Atlantic City, N. J.—Institute headquarters, 500 N. Dearborn St., Chicago 10, Ill.

June 19-20—National Apple Institute annual meeting, Yakima, Wash.; June 21-22—tour.—Truman Nold, Exec. Sec'y, Washington Bldg., Washington 5, D. C.

June 25-27—Entomological Society of America, Pacific branch, 42nd annual meeting, El Cortez Hotel, San Diego, Calif.

July 17—Pennsylvania, West Virginia, Maryland and Virginia state horticultural societies combined summer meeting, Moore and Dorsey properties, Berryville, Va.—John F. Watson, Sec'y, Staunton.

July 28-30—International Apple Association, Queen Elizabeth Hotel, Montreal, Canada.—Association headquarters, 1302 18th St., N. W., Washington 6, D. C.

Sept. 24-26—Florida Fruit and Vegetable Association 15th annual convention, Hotel Fontainebleau, Miami Beach.

Sept. 29-Oct. 1—Texas Citrus and Vegetable Growers and Shippers, Shamrock-Hilton Hotel, Houston.—Organization Headquarters, Harlingen.

Needed:

"General Practitioners" in Transportation

Today, public policies place artificial and severe restrictions upon the opportunity of any one form of transportation, such as railroads, to serve the public through the use of other means of transportation, such as that by highway, waterway or airway.

Yet, in other industries, diversification of products has become common, and has proved beneficial both to those industries and to the public.

Why shouldn't our transportation agencies, too, be allowed to benefit by diversification?

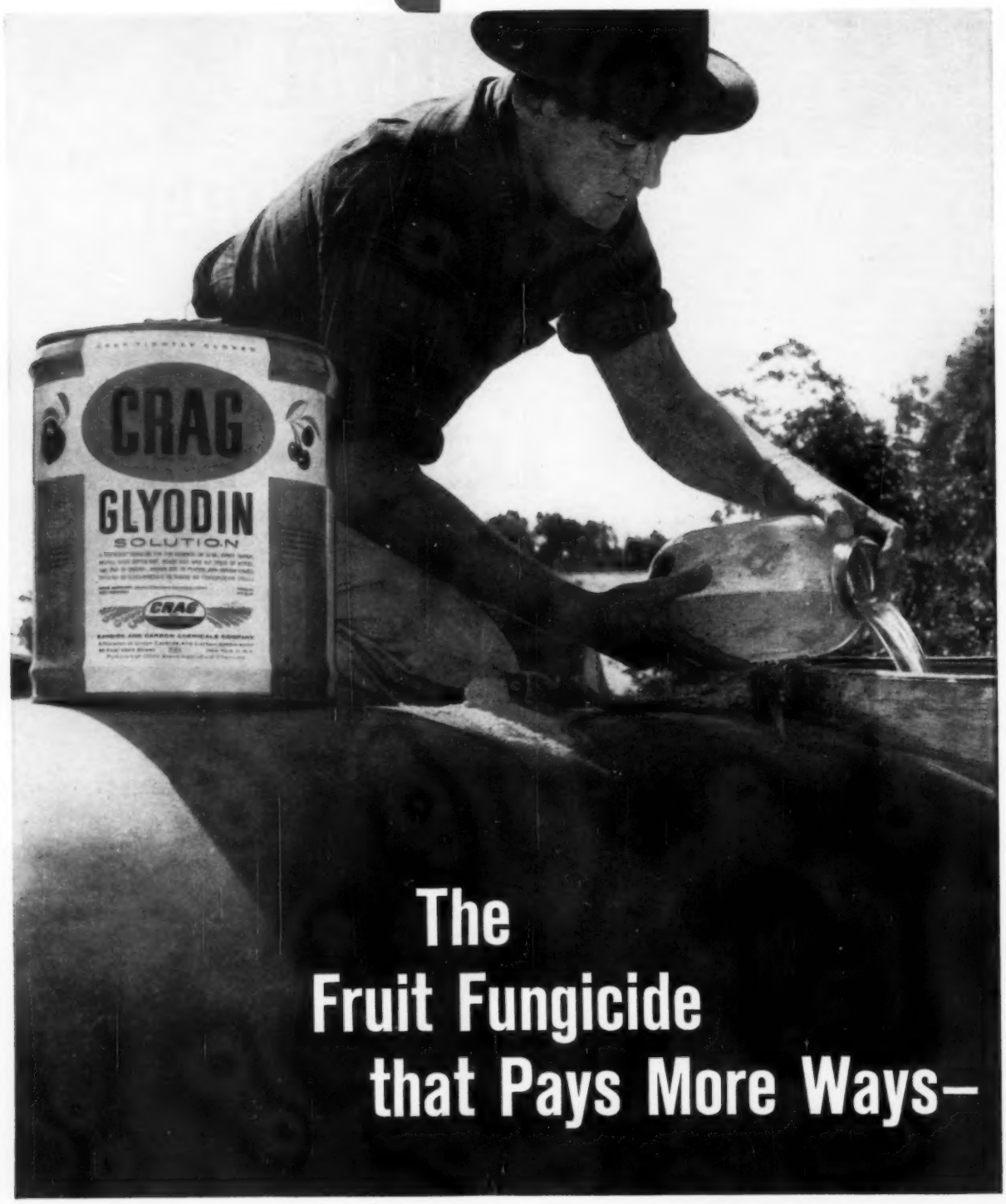
Clearly, diversification would be to the advantage of the nation's shippers. They could then arrange for their transportation through a single transport company which could utilize any or all means of carriage needed to do the particular job at hand most efficiently. That's why the railroads ask for removal of present artificial limitations.

They seek only the same opportunity as anyone else to enter into other fields of transportation. Then they could become "general practitioners" in transportation — using a wide variety of facilities to serve you more efficiently.

Isn't this common sense?

ASSOCIATION OF AMERICAN RAILROADS
WASHINGTON, D. C.

TOP QUALITY



The Fruit Fungicide that Pays More Ways–

AT LOW COST

CRAG BRAND GLYODIN saves you money TWO WAYS!

FIRST-- It costs less. You can figure that Glyodin costs only 75¢ per 100 gallons of early spray, and 56¢ per 100 gallons of cover spray on apples. Here's a typical example for a grower who uses 300 gallons of spray per acre, and sprays 10 times during the season (4 early sprays, 6 covers):

Total cost of another commonly-used fruit fungicide	**$25.20 per acre, entire season.**
Total cost of Glyodin	**19.08 per acre, entire season.**
Total savings from Glyodin	**$ 6.12 per acre**

If you have a hundred acres of apples, your total saving on the fungicide material alone is over $600.00 . . . and you get top-quality scab and summer disease control.

SECOND-- In addition to economy, Glyodin gives you *exclusive, extra advantages.* It suppresses mites, may cut down on mite sprays. Glyodin is an excellent spreader-sticker that stays on even in wet weather. It helps improve the effectiveness of some insecticides, and combines well with sulfur for mildew control.

CRAG Glyodin is truly the scab spray that pays more ways. Use it in your early and cover sprays during 1958 . . . and let it pay you a real dollar bonus.

CRAG AGRICULTURAL CHEMICALS ARE PRODUCTS OF

Union Carbide Chemicals Company

Division of Union Carbide Corporation • 30 East 42nd Street • New York 17, N. Y.

UNION CARBIDE

—See Your CRAG Glyodin Supplier!

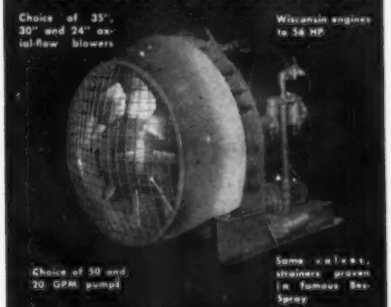
Glyodin is available in 5-gallon, 30-gallon, and 54-gallon drums.

"Crag" and "Union Carbide" are registered trade-marks of Union Carbide Corporation.

AIR BLAST SPRAYER

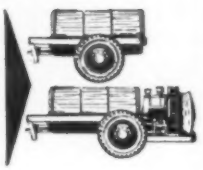
$1095 and up

Just attach the BESLER POWER PACKAGE


Choice of 35", 30" and 24" axial-flow blowers
Wisconsin engines to 56 HP
Choice of 50 and 20 GPM pumps
Same valves, strainers proven in famous Bes-Spray

...to your old tank and trailer.

"I put it together in one day . . . have used it a year now . . . and would not trade it for any other air sprayer," says one grower. (Name on request)



The Power Package is a complete sprayer, with pump and engine, but without tank and trailer; the same machine that's been proven for years as the Bes-Spray air sprayer.

4 SIZES

Two Models with 24" fan
• 30" fan • 35" fan

BESLER CORPORATION

4053 Harlan St. Emeryville
Oakland 8, California

Dept. AF-4

Please send me Power Package literature and the name of your nearest dealer.

My name_____

Address_____

Fruit grower____ Student____ Other____

Number of acres of orchard_____

Grapes

Raising Sugar Content

FOR many years the goal of grape growers in the Northeast has been to increase production per acre. Much has been done to achieve this goal through research on fertilization, soil management, training, and pruning techniques.

As per acre yields increased, there was often an accompanying decrease in the sugar content of the grapes. As long as processors purchased Concord grapes on a tonnage basis, this was of little concern to the grower. In recent months, however, some processors have adopted the policy of buying grapes on a sliding scale per ton, depending on the sugar content of the fruit.

The problem facing grape growers who had previously pushed production to the limit is either to find some means of raising the sugar content of his fruit under high production levels or to reduce his per acre production to a point where fruit of acceptable sugar content can be grown.

Unfortunately there are no cut-and-dried answers to this problem. It may be largely an economic one. If a grower, on the one hand, could manipulate his fertilizer and management practices to produce 3.1 tons per acre of grapes with 18.5% sugars, or 6.6 tons per acre of 15.9% sugar content grapes on the other hand, then he must decide which of these two situations would return him the greatest net income per acre. The above figures for yield and sugar content are results obtained experimentally at Wooster, Ohio, during the 1954 season under differential nitrogen fertilization.

Beyond the purely economic considerations of this problem, we must still consider those factors over which the grower exercises some control.

The attainment of high quality is dependent upon good exposure of the vines to sunlight. This involves number of plants per acre, training system, trellis height, and pruning.

Recent studies in New York have shown that a planting density of 640 vines per acre with vines set 8½ feet between rows and 8 feet within the rows is desirable from the standpoint of high yields per acre. Fewer vines per acre resulted in fewer tons per acre. Although more vines per acre resulted in slightly higher tons per acre, the closer spacing caused a depression in vine vigor and in fruitfulness per bud.

The nature of the trellis and of the training system have much to do with producing high quality grapes.

For vines of a given state of vigor, better distribution of the foliage can be obtained on a high than on low trellis. For this reason, the minimum trellis height should be 5½ feet, and 6 feet is preferred.

Of all the training systems available for use with the vertical trellis, the umbrella Kniffen system appears to afford the best all-around means of distributing fruiting canes so as to permit maximum and uniform exposure to light. This system also provides a practical way of partially blocking carbohydrate materials manufactured in the leaves in the portion of the fruiting shoots and canes where they can be utilized in fruit development. This is accomplished when the canes are carried up and bent sharply over the top wire and then tied to the lower wires.

A review of the experimental work on pruning severity as it affects fruit quality shows that good yields, berry size, and cluster size are obtainable using the 30 plus 10 balanced pruning formula (30 buds for first pound of year-old wood removed during pruning and 10 more buds for each pound thereafter). This level of pruning severity does not alter sugar content of the fruit juice appreciably as compared to more severe (20 plus 10) or less severe (40 plus 10) pruning.

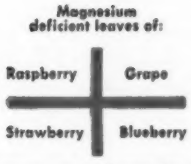
Increasing rates of nitrogen fertilizer application have been shown to increase vine vigor and yield, with an accompanying reduction in sugar content of the fruit. Experiments at Wooster indicate that annual applications of nitrogen at rates of from 40 to 60 pounds of actual nitrogen per acre per year are necessary to maintain profitable production. At these rates fruit of acceptable sugar content are obtained.

Deficiencies of other essential elements have also been shown to detrimentally affect fruit quality as measured by sugar content of the juice. The sugar content of the fruit from potassium deficient vines was 1% lower than that from comparable vines supplied with 2 pounds per vine of potassium sulfate. Vines treated with ½ pound per vine of manganese sulfate produced fruit

before it's

TOO LATE for TOP PROFITS

...specify Sul-Po-Mag®
in your premium mixed fertilizer



With many bush, bed, and vine fruit-growing areas known to be magnesium-deficient, crop losses may be only a heavy rainfall away. *Before* magnesium deficiency can strike—*before* it's TOO LATE for TOP PROFITS—insure your fruit crop an adequate supply of magnesium. Premium mixed fertilizer containing Sul-Po-Mag®, also called SPM, supplies fast-acting, readily-available, water-soluble magnesium and premium sulphate of potash. Sul-Po-Mag is in granular form to lessen leaching. Take no chances on magnesium deficiency losses . . . Ask your dealer for premium mixed fertilizer containing Sul-Po-Mag.

S·P·M PREMIUM

Premium quality fertilizer certified through use of a balanced combination of the water-soluble magnesium and potash obtained from Sul·Po·Mag®

This Seal Guarantees Your Premium Fertilizer Contains

Sul-Po-Mag®

Water-Soluble Double Sulphate of Potash-Magnesia
($K_2SO_4 \cdot 2MgSO_4$) 22% K_2O – 18% MgO

INTERNATIONAL MINERALS & CHEMICAL CORPORATION

POTASH DIVISION . . . . . 20 N. WACKER DRIVE, CHICAGO 6, ILL.

This Nursery Model FITCHBURG CHIPPER Eliminates Brush Hauling

Makes Low Cost Mulch

The next time you haul or burn prunings, remember a Fitchburg Chipper will quickly chip your prunings to eliminate hauling . . . provide plants and shrubs with a protective moisture cover to guard against summer dry spells, or protect your evergreens from winter drying.

The nursery size Fitchburg Chipper is inexpensive. Yet it converts nursery prunings, waste wood, into a long-lasting, moisture-holding mulch that stays put, won't burn or blow away. It lasts year after year and gradually breaks down into humus.

Model C5 is widely used by orchardists and nurserymen. This model operates with power take-off disc clutch control, from your tractor. A Fitchburg Chipper gives you "on the spot" convenience no matter what type of tractor you have.

The patented spring-activated feed plate, a Fitchburg exclusive, completes the safe, single operator chipping equipment. Each limb is held tightly against a cutting head. With the spring-activated feed plate, you chip brush in various sizes up to its rated capacity with equal effectiveness. There is less shock to the cutting edges, the tough, chrome steel knives stay sharp longer. Chipping goes faster.

FREE CHIPPER FACTS

Write Fitchburg today for free Chipper Facts. Know how a Fitchburg Chipper can save you man-hours and give you low-cost mulch, besides. Tell us how many acres and the type of nursery stock you have, and we will send you the proper literature and prices on models best adapted for your work. The coupon is for your convenience.

FITCHBURG ENGINEERING CORPORATION
Fitchburg, Mass.
Dept. AFG-38

PLEASE SEND facts about Fitchburg Chippers suitable for nurserymen—also prices. We have_____acres of_____ nursery stock to prune.

*We have a*_____*Tractor.*

*Name of Nursery*_____

*Name of Individual*_____

*Address*_____

*Town or City*_____ *State*_____

containing 0.8% more sugar than those suffering from manganese deficiency.

It goes without saying that good foliage free from insect and disease troubles is necessary to produce the highest quality fruit. There is no magic formula for producing high quality grapes. One must adhere to all of the good management practices involved in grape growing. —*James M. Beattie, Ohio Agricultural Experiment Station, Wooster.*

New Pie Filling

A NEW process for making Concord grape pie filling has been developed by Sunset Frozen Foods, Inc., Fredonia, N. Y.

The product may lead to additional markets for growers in the Lake Erie grape belt, extending from western New York into Pennsylvania and Ohio.

A grape deseeding machine and the elimination of preservatives and artificial coloring have made it possible for Sunset to produce a pie filling with a bright, glistening look often lacking when starch is used. The new process also permits refreezing the filling innumerable times.

Nuts

Chinese Chestnuts

AFTER waiting 12 years to find out that only one of my 10 seedling Chinese chestnut trees bore a good, large-size nut, I was convinced that a commercial orchard could not be grown with seedling trees.

Today, I have 8 acres planted to grafted Chinese chestnuts—supposedly the second largest planting of grafted Chinese trees in this country.

Although I have been interested in nut culture as a hobby for more than 30 years, I had no time to experiment with nut-tree growing until after retiring from fruit growing in 1948.

The 10 seedling trees I had at that time were about 15 years old. They were about 10 to 12 years old before they finally started to bear—and then I had 10 different varieties and sizes of nuts.

I was further convinced that seedlings were not the answer to successful chestnut growing after seeing the progress made with grafted Chinese chestnuts in 1949 at the Bureau of Plant Industry in Beltsville, Md.

The following year I planted Chinese seed in my garden. The next

William S. Weaver looks over chestnut crop.

year I received instructions in nut grafting from a friend, Fayette Etter of Lemaster, Pa. I have been planting nuts and grafting them since that time. Most of my information has come from the Northern Nut Growers Association and the Pennsylvania Nut Growers Association.

I have one 3-acre block of grafted Chinese chestnuts which are five years old. The second planting of 2 acres is four years old, and in 1955 I planted another block of three acres.

The trees are planted 40 feet apart on the contour in permanent sod, which is mowed three times each year, with all cuttings left on the ground. I practice clean cultivation in a circle of about 3 feet in diameter around each tree, with the exception of trees planted two years ago, around each of which I use a heavy mulch of hay.

My planting in each block is about equally divided among Kuling, Meiling, Nanking, and Abundance, with about a dozen seedlings from different nurseries in each block as a check. An 18-inch wire guard around each tree protects it from rodents. Two years ago I started to use a tree auger attached to my Ford tractor for digging tree holes.

William Weaver, of Macungie, Pa., was a fruit grower for 37 years before starting work on Chinese chestnuts. In the spring of 1956, he assisted in planting more than 100 nut trees on President Eisenhower's Gettysburg farm. Donated by members of the Northern Nut Growers Association, the trees came from all over the U.S. Information in this article was presented by the author at an annual meeting of the Northern Nut Growers Association.

In 1954 my four-year-old trees had a few nuts, but none of the seedlings had blossoms. The following year the grafted trees had a great many burrs, but there was still no sign of nuts on the seedlings.

Although I do not expect to make a fortune out of nut culture, I am having fun growing the trees and planting the orchards.—*William S. Weaver.*

New! For Fire Blight Control

Agri-mycin® 500*

A combination Agri-mycin Copper Dust, more effective, more economical

Agri-mycin 500, a new formulation of the antibiotics Terramycin,® streptomycin and basic copper sulfate, forms a synergistic action to give increased control against *Erwinia amylovora*, the causative agent of fire blight.

Four years of tests on more than 100 thousand apple, pear and walnut trees have shown that Agri-mycin is the most effective control yet discovered for fire and walnut blight.

Now, it has been combined with basic copper sulfate to give you faster, more effective control of fire blight of pears and apples.

Agri-mycin 500 fights blight within the plant tissues as well as protecting the outside surface as the antibiotics are absorbed directly into the leaves and blossoms of your trees.

This exclusive new patented synergistic formulation of Terramycin, streptomycin and basic copper sulfate is now available to West Coast Growers for the first time.

For growers who prefer not to use a basic copper formulation, Agri-mycin 100 (without copper) is available in both dust and spray powder forms.

Agri-mycin 500 and Agri-mycin 100 in dust and spray powder formulations are now available from these leading West Coast formulators:

L. H. Butcher & Co., Los Angeles
Pacific Guano Corp., Berkeley
Sunland Industries Inc., Fresno
United Chemical Co., Richmond

Agri-mycin® 500*

U. S. PAT. NO. 2,777,791

® TERRAMYCIN BRAND OF OXYTETRACYCLINE

Pfizer

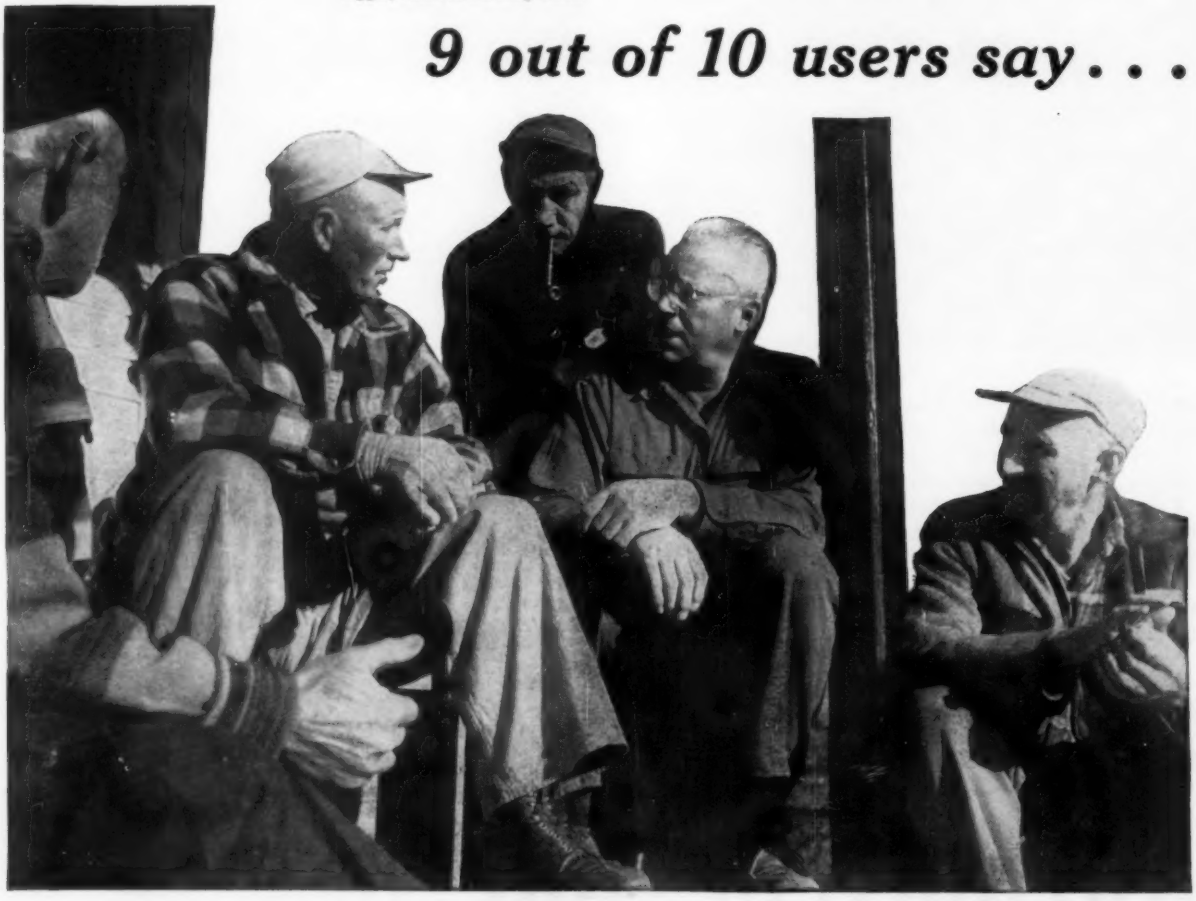
Chas. Pfizer & Co., Inc. Brooklyn 6. N.Y.

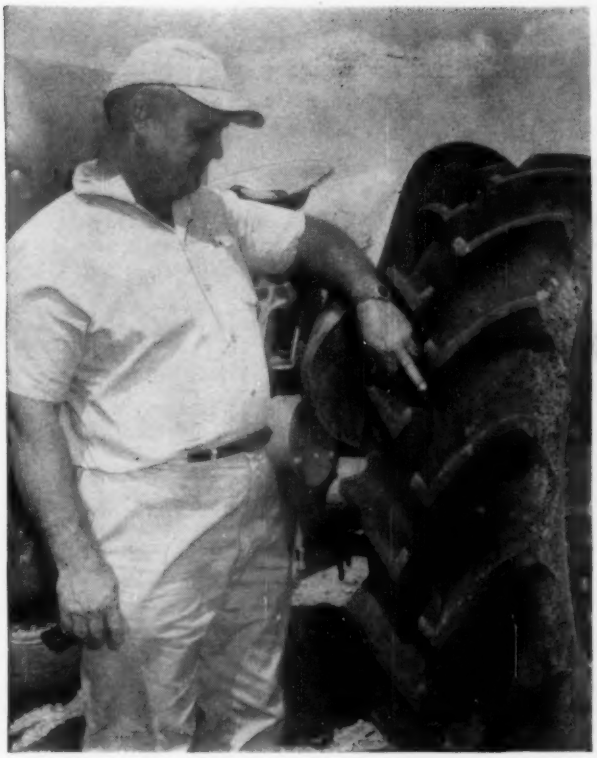
World's largest producer of antibiotics

B.F.Goodrich

"**B.F.Goodrich Power-Grip** tires pull better than any tires I've ever used, particularly over slick cover crops," says Lawrence E. Flood, who farms 400 acres near Council Bluffs, Iowa. He never needs chains in mud because of the bigger, wider Power-Grip tread.

9 out of 10 users say . . .





"Power-Grip tread is all I could expect in traction, toughness and extra wear," writes O. P. Henry, Maryville, Tenn. He says the higher cleats dig in for more drawbar-pull—the specially reinforced tread wears longer even in the flint gravel soil of his 400-acre farm.

"Special Service tires pull better because they stay clean in my fields," reports Ray Johnson, who raises rice on his 1,374-acre farm near Stuttgart, Ark. B.F.Goodrich Special Service tires have slanting cleats that will not scoop up mud, a wider tread for maximum flotation in water-covered rice fields.

"B.F.Goodrich farm tires are the best I've ever used!"

(Based on an actual survey of farmers all over the country)

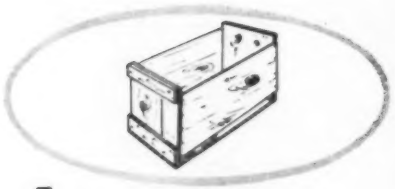
DON'T take our word for it—take the words of farmers just like yourself who have used B.F.Goodrich farm tires. 9 out of 10 of them say B.F.Goodrich farm tires are the best they've ever used! Why not find out firsthand what they're talking about? See your B.F.Goodrich dealer and try a set of Power-Grip, Super Hi-Cleat or Special Service tires on your tractor today. *B.F.Goodrich Tire Company, A Division of The B.F.Goodrich Company, Akron 18, Ohio.*

"I prefer Power-Grip tires because in plowing bottom land where front wheels often load up with mud, I still get plenty of traction." So says Gordon Keleher, Sioux Falls, S. D.

"Super Hi-Cleat tires run clean, whether in mud, tough alfalfa sod or plain old gumbo," Glenn Riffe of Windfall, Ind., reports. B.F.Goodrich Super Hi-Cleat tires sell at low prices, yet have the same tread design that came on new tractors for years.

"Up to 60% greater traction than other makes," is what Lester Nittler reports B.F.Goodrich Power-Grip tires give him. Here Power-Grip tires easily pull a 3,500-lb. chisel through hard pan on Nittler's Rio Grande Valley farm near Elsa, Texas.

Your B.F.Goodrich dealer is listed under Tires in the Yellow Pages of your phone book



Longer Life... for picking boxes and baskets

One quick, inexpensive dip in Cellu-san saves you money 5 ways:

- Wood won't become brittle and break so easily—stays "alive" and resilient.
- Containers stay cleaner, more sanitary —resist penetration by fruit juices.
- Crop contamination from mold is controlled, assuring much less waste.
- Tare weights are stabilized through far less moisture pick-up.
- Rot will not cause decay of wood fibers nor loosening of fasteners.

Write today for an 8-page brochure about Cellu-san—the most widely used wood preservative in the food industry.

Cellu-san

Chemical Products Division, Darworth Incorporated.

Address: 1 Peach Lane, Simsbury, Conn., or P.O. Box 1422, Palo Alto, California.

Please send me illustrated literature about longer service life for harvesting containers.

Name_____

Company_____

Address_____

City_____ State_____

Berries

Bare Ground and Frosts

SPRING FROSTS at Purdue University, Lafayette, Ind., on May 3 and 4, 1957, damaged strawberry blooms, and an interesting observation was noted at the time by the late C. L. Burkholder of the department of horticulture.

On mulched strawberries from which the straw had been removed from over the rows and placed between the rows there was a kill of two to three blossoms per cluster. On the same varieties where no mulch had been used and the ground was bare, there was almost no frost injury.

A possible explanation is that the bare ground in the unmulched beds absorbed more heat from the sun in the daytime and radiated more heat during the night, thus affording some protection to the blossoms.

This observation was confirmed on a small commercial planting, half of which had been mulched with straw in the fall and half of which had no mulch. Spring bloom on the mulched area was four or five days later than on the unmulched plants, but the unmulched area came through without any damage while the mulched plants were quite badly injured.

New Jersey's Jerseybelle

ATTRACTIVE appearance, large size, and good shipping qualities are attributes of the Jerseybelle variety of strawberry, an introduction of New Jersey Experiment Station. Marketwise, too, Jerseybelle is returning to Garden State growers higher prices on the average than, for example, the Sparkle variety.

In the New Jersey strawberry report in the January issue of AMERICAN FRUIT GROWER, on page 44, the prices received in 1957 for Sparkle and Jerseybelle were somewhat garbled. The impression was given that Sparkle strawberries were worth more than Jerseybelle. The following quotation, from Carter R. Smith, New Jersey Experiment Station pomologist, will set the record straight:

"On May 27 (1957) Sparkle strawberries, second picking, were bringing about $8 for a 16-quart crate at the Hammonton, N. J., auction, while Jerseybelle strawberries were worth about $11. The second week in June the price had fallen so that Sparkle berries were bringing between $2.50 and $2.90 at the same auction, and Jerseybelles were between $4 and $4.55 for a 16-quart crate."

Strawberry production in the Garden State last year reached a peak of 9,520,000 pounds.

Disease Control

TWO apparently unrelated but closely associated diseases occasionally cause severe losses in strawberries. These diseases are strawberry leaf blight and strawberry stem-end fruit rot. Particularly susceptible varieties are Robinson, Dunlap, and Red Crop.

Since the diseases overwinter in both dead and live strawberry foliage and produce spores early in the spring, infection of strawberries takes place just as plant growth begins.

These initial infections are responsible for the egg-shaped spots which later appear on the leaves and sepals. As the season advances stem-end fruit rot infection develops and eventually the berry shrivels and mumifies. If the diseases are not controlled, secondary infection occurs throughout the season.

Control of leaf blight and stem-end fruit rot requires elimination of the primary source of infection. A new mercury fungicide, Phix (Chemley Products Co.) is being recommended for such control. Phix is applied to strawberry plantings in early spring, at the dormant or delayed dormant stage.

Where strawberry fields are mulched in late fall, Phix may be applied as an eradicant spray about 10 days before mulching rather than in the spring when the mulch is removed and growth has begun.

General recommendation for spring application of Phix is at the rate of 4 ounces per 100 gallons, using 150 to 200 gallons of spray per acre. Where strawberry fields are mulched in late fall, Phix should be applied at the same rate 10 days before mulching.

Since climatic conditions vary, consult your county agent or state experiment station for specific spray schedules for control of these diseases.

The following plans are available from AMERICAN FRUIT GROWER, Willoughby, Ohio:

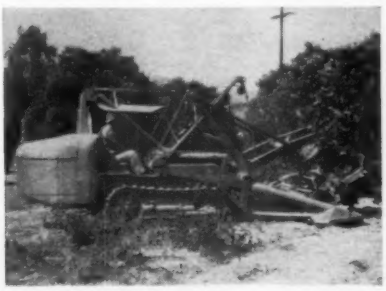
Plastic Greenhouse	$0.50
Roadside Market	2.00
Tenant House	2.00
Pole-type Packing House	2.00
Refrigerated Storage	2.00
Machinery Storage Shed	2.00

Working drawings are included with each set of plans. Send check or money order.

Citrus

Out in Seconds!

SCENES similar to these pictured below are being duplicated throughout southern California, with tree crops being replaced by row crops.—*William Fitchen.*



Weldon Field, Orange, Calif., and his vertical tree puller can remove tree in 30 to 60 seconds. Modified Caterpillar "22" is heavily counterbalanced in back, with fork lift in front and with a complicated series of reduction gears.

Chisel breaks up ground to depth of 3 to 4 feet and brings to surface small roots which might have gone by unnoticed by tree puller.

"Cat" completely removes tree, "roots and all." Roots are 12 to 15 feet long; should one break off while pulling, Field digs out end of root and hooks a chain around it to pull it out.

Trees have all been removed; only few standpipes and holes where orange trees once stood remain. Cleared grove will be replaced by new tree plantings or vegetable crops. Old trees are bulldozed into piles to be burned.

Improve size and quality of fruit ...lower your costs by chemical thinning with

ACP AMID-THIN

Thoroughly tested over the past 5 years, proved over the past 3 years on commercial orchards in 20 leading apple-growing states, ACP Amid-Thin has given consistently good thinning with no injury to foliage or fruit. With hand-thinning expensive and time-consuming, here's why

YOU SHOULD USE AMID-THIN

1. Has been thoroughly tested—and proved effective
2. Unlike other thinning agents, it can safely be used early —no injury to foliage or fruit
3. Such early application attains a leaf-fruit ratio more favorable to fruit and bud formation the following year
4. Its wide range of safety at concentrations needed for thinning reduces likelihood of overthinning
5. Lowers production costs by eliminating need for expensive hand-thinning

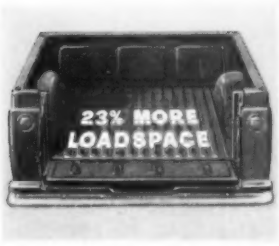
Why not put ACP AMID-THIN to work for you

AMERICAN CHEMICAL PAINT CO.
Agricultural Chemicals Division
St. Joseph, Mo. • AMBLER, Pa. • Niles, Calif.

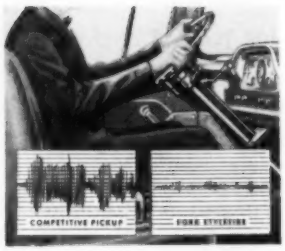
WEEDONE ACP WEEDONE

Originators of 2,4-D and 2,4,5-T Weed Killers

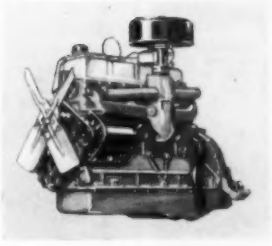
'58 FORD America's



Biggest Pickup Loadspace! Modern, cab-wide Styleside bodies offer 23% more loadspace than any competitive half-ton pickup—standard at no extra cost! Flush sides make side-loading far easier!



Most Comfortable Ride! Impact-O-Graph tests *prove* Ford gives you smoothest ride of any half-tonner—a ride mighty close to that of a car! "Driverized" cab has Hi-Dri ventilation, inboard cab step!



New Economy Carburetor! New vacuum control valve and improved accelerator pump system are designed for maximum gas mileage! And only Ford offers Short Stroke power in both Six and V-8!

Low-cost Replacement Parts! Ford replacement parts prices are traditionally low. In fact, in many cases, you'll find Ford parts prices substantially lower than those of other truck manufacturers!

'58 Ford Styleside Pickup . . . gives you modern functional styling, "Safety Vision" dual headlights, exclusive "Driverized" cab, America's biggest pick-up bodies . . . all standard at no extra cost!

lowest-priced Farm Pickup with cab-wide box!

Gives you 23% more loadspace

All-around modern design, plus lowest all-around cost—that's the money-saving team that Ford farm pickups give you for '58! Only from Ford, for example, do you get a modern cab-wide body at no extra cost!

And Ford costs not only *start* low, they *stay* low! Modern Short Stroke engines—Six as well as V-8—are designed to reduce wear, provide long life.

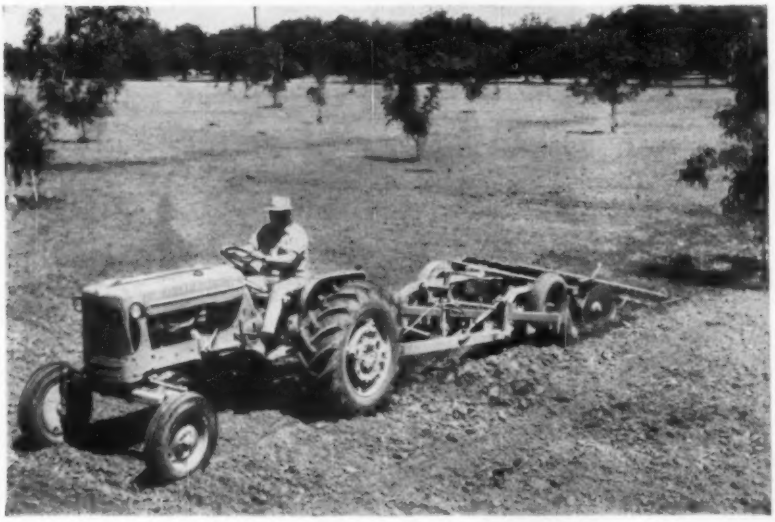
Maintenance costs are low, too! Ford Trucks are built for rugged service, but when replacement parts are needed, Ford parts are priced *low* and you can get them almost everywhere! Resale value, too, is traditionally high. An independent study of 10 million trucks proves that Ford Trucks last longer! Couple these low Ford costs with Ford's modern advances —dynamic styling, biggest loadspace, car-like ride —and you have a pickup value that puts you ahead today . . . keeps you ahead! Your local Ford Dealer will gladly demonstrate Ford's savings.

FORD TRUCKS COST LESS

LESS TO OWN . . . LESS TO RUN . . . LAST LONGER, TOO!

Now... HIGH-OUTPUT

ORCHARD POWER



... with Low-Line, High-Crop Design

You'll wonder where the labor went — out of orchard and grove operations! It's a real discovery when you step aboard the D-14 Tractor.

Here is the low top-line, just right for orchard work, but now — for a new high in work output — you get all this besides:

Clearance — a full 25 inches.

Pull Power that says "go" to an 8-foot, 3-inch offset disc harrow and all similar loads. A strong 3-plow tractor with driving 32 horsepower from its POWER-CRATER engine.

Eight Distinct Forward Speeds, shifting on-the-go with live hydraulics, continuous PTO with two-clutch control. Power Director gives you "big stick" command over every power job in the orchard.

Rear wheel traction equal to a 6,400-pound tractor! TRACTION BOOSTER system adds the weight, as needed, for the tough spots.

Wide selection of matched implements to lighten all heavy orchard work — offset and tandem disc harrows, mounted spring-tooth harrows, furrowers, coil-shank cultivators, chisels, ditchers, border ridgers, scraper, scoop and loader.

Discovery drive the Allis-Chalmers D-14 Tractor. In 60 minutes or less, you'll know how orchard tractors of the future will feel. See or call your Allis-Chalmers dealer.

ALLIS-CHALMERS, FARM EQUIPMENT DIVISION, MILWAUKEE 1, WISCONSIN

ALLIS-CHALMERS

POWER-CRATER and TRACTION BOOSTER are Allis-Chalmers trademarks.

By HENRY BAILEY STEVENS

This article is the second and final installment on the author's trip to India where he attended the International Vegetarian Congress.—Ed.

Many Sacred Trees THERE are many sacred trees in India—huge banyans where the branches, taking root, have produced a forest out of a single matrix; spreading neem trees full of oily locust-like pods; the jambu (roseapple), center of the legendary garden of primeval life; but greatest of all the Bo tree, the peepul, long sacred to Vishnu in the days even before Buddha.

The climax of a 150-mile bus trip was a visit to the spot where Gautama is said to have found enlightenment under such a tree. Botanists have named it *Ficus religiosa* and believe that the ancient veneration for it is due to its extraordinary ability to resist blight. The long tapering tip and waxy surface of its leaves are ideally fashioned to shed moisture and to resist the attacks of fungi.

Looking up now at the vigorous green of the Bo tree which is said to be a descendant of the original and stands beside the great temple, I reflected that it should make a deep appeal to all modern orchardists. If we could only develop fruit trees with such foliage, arduous spray schedules would suddenly become out of date!

On many an Indian farm I noticed a great tree retained in a central spot of a field in spite of the competition it must exert on the prevailing crop.

Much land has been denuded that should have been left in forest, and, as a result, Delhi today is feeling the spread of the nearby desert.

Vegetarian Congress Meets INDIA was an ideal place for the Vegetarian Congress to meet. Here we were not looked upon as cranks. The public understood what we were talking about; preparations had been made for us on a massive scale. Translating Bombay in terms of New York City, for example, picture a huge banner across Times Square announcing the time and place of the congress and the representation of 20 nations. At Central Park a pavilion is erected to seat

5000 people, with an adjoining exhibition tent. A special plane is bringing the Indian president (a lifelong vegetarian) from the capitol to inaugurate the proceedings. Interviewers are concerned about the economic aspects of diet, its effects upon the population problem and land policies; they are troubled about increasing soil erosion and the spread of the desert.

Wherever we went, we were decorated with garlands. At several unscheduled towns, local leaders came to the railway station to meet our train. Once at 11 p.m. they even entered our sleeping compartments and put garlands on us in bed!

The president and the prime minister received us in their homes. The governors of various states held large receptions. A maharajah entertained us all at breakfast and gave us rides on his elephants. Large luncheons and dinners and sight-seeing tours were the order of our days. It was a new side to the food problem to find ourselves embarrassed by the number of courses and the multiplicity of vegetarian dishes.

The heroes to whom statues are erected by the new nation are rarely soldiers. At a great memorial meeting to Gandhi in Madras I was invited to speak for America. I said in part: "This has been a terrible century with the mounting destruction of two world wars and the preparations for a possible third. If it were not for the light which Gandhi lit, this would have been an unbearably Dark Age. I was never so proud of our American Congress as when at Gandhi's passing it put aside all work for a day to pay its share in the worldwide tribute."

Fruit Saves Day THE three-week congress with visits to seven cities in the end became something of an endurance contest for the foreign delegates. The rail journey around India extended about 4000 miles and required seven nights on the train. Dust and grime from the open windows saturated us. The whine of beggars gnawed at our souls.

Being food-conscious, several of us became haunted by the fear of contamination. Tired and surfeited, we were threatened by colds. It was significant then to see how instinctively we all turned to fruits and nuts. The great value of these fruits and nuts was that they were individually packaged by Mother Nature herself. The danger of contamination was slight.

Address your "Windfalls" contributions to Henry Bailey Stevens, AMERICAN FRUIT GROWER, Willoughby, Ohio.

KILL FUNGI with PHYGON-XL

You get cleaner fruit, better yield with this low-cost killer. Phygon®-XL, the orchard fungicide, can sizably increase this year's peach profits at very little cost to you. This easy-to-use fungus killer gives excellent control of bitter rot, California blight, peach leaf curl, brown rot and blossom blight and many other diseases.

Remember, Phygon-XL is the cheapest, most effective fungicide available, not only for peaches but for apples as well, for it controls apple scab and bitter rot. Harmless to pollen and bees, does not affect odor or flavor of fruit.

Order Phygon-XL from your local supplier today. Write, wire or phone us if unable to locate immediate source of supply.

US RUBBER **United States Rubber**

Naugatuck Chemical Division

Naugatuck, Connecticut

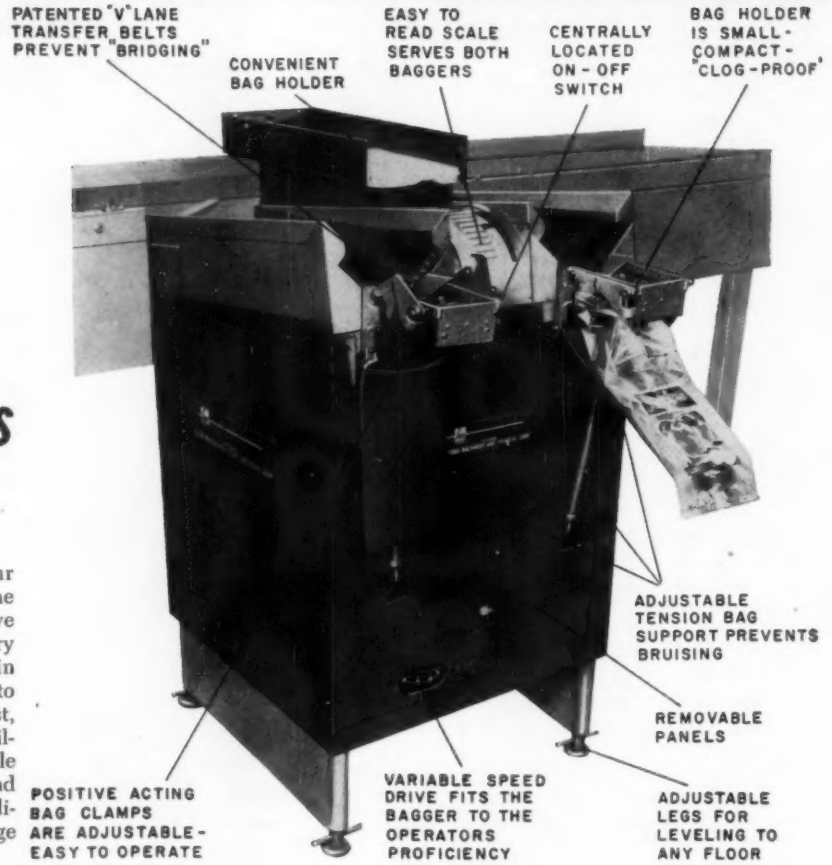
producers of seed protectants, fungicides, miticides, insecticides, growth retardants, herbicides: Spergon, Phygon, Aramite, Synklor, MH, Alanap, Duraset.

fmc Automatic Apple Bagger

Gently, accurately weighs and fills over 450 bags per hour!

Here is the missing link in your apple sales preparation. With one operator, you will be able to save precious hours and dollars every day. Completely automatic in operation, the bagger is designed to serve you with the fastest, easiest, and most GENTLE operation available. The springless balance scale assures you accuracy equal to hand weighing and the single scale indicator serving both baggers is large and easy to read.

The FMC Automatic Bagger is ideal for the inexperienced operator. All unnecessary motions and movements by the operator have been eliminated. When the correct weight has been reached, the operation automatically stops and transfers to the next bagger. For speedy operation, one side of the unit is carefully filling and accurately weighing one bag while the operator is changing bags on the opposite unit. Write for detailed literature today!


PATENTED "V" LANE TRANSFER BELTS PREVENT "BRIDGING"
CONVENIENT BAG HOLDER
EASY TO READ SCALE SERVES BOTH BAGGERS
CENTRALLY LOCATED ON-OFF SWITCH
BAG HOLDER IS SMALL-COMPACT-"CLOG-PROOF"
ADJUSTABLE TENSION BAG SUPPORT PREVENTS BRUISING
REMOVABLE PANELS
ADJUSTABLE LEGS FOR LEVELING TO ANY FLOOR
VARIABLE SPEED DRIVE FITS THE BAGGER TO THE OPERATORS PROFICIENCY
POSITIVE ACTING BAG CLAMPS ARE ADJUSTABLE-EASY TO OPERATE

Designed for speed—the FMC Automatic Bagger and companion bagging table form a combination unrivaled for speed, ease of operation, and accurate weight. Note the padded receptacles for unsealed bags on the bagging table that prevent bags from spilling before the seal is attached. The new bagger is designed to receive apples from a return-flow belt table thus assuring a constant flow of fruit for peak efficiency.

Putting Ideas to Work

FOOD MACHINERY AND CHEMICAL CORPORATION
Florida Division
General Sales Office—LAKELAND, FLORIDA
Plants: LAKELAND, FLORIDA—WOODSTOCK, VIRGINIA

FLORIDA DIVISION, FOOD MACHINERY AND CHEMICAL CORP.
P. O. BOX 1718, LAKELAND, FLORIDA

Gentlemen: Please send me details on FMC Apple Baggers.

Name_____

Company_____

Address_____ RFD No._____

City_____ State_____

1958 GROWER'S GUIDE

Helps you plan a complete insect control program for 1958

THE CHECK POINTS and charts on this and the following pages were prepared by the manufacturer of malathion insecticides to help you get top yields of quality crops.

☐ **1. Have you reviewed this year's recommendations from your State Extension Service?** Your Experiment Station is constantly working with both new and established insecticides under conditions similar to your own. Their recommendations are meant to help *you*. Check local agricultural authorities for particular application and timing problems. Generally, more than one insecticide is listed for a given job. Use the following checks to help you narrow the list.

☐ **2. How many different insects does the insecticide control?** To keep control programs simple, a good insecticide should have a wide use range. That is, let you control many different bugs with one spray. Malathion, for example, kills 105 insects on 93 different crops. An insecticide that does well on only one or two insects is probably not your best bet; investigate the chemical for overall performance.

☐ **3. How about toxicity? Does it require use of respirator, protective clothing?** Can careless use endanger you and your help? Most of the effective phosphate insecticides are *high* in toxicity to man, requiring respirators and cumbersome protective clothing. Malathion does not. It combines effectiveness with safety; the U.S. Public Health Service *Memoranda on Economic Poisons* says, "the toxicities of malathion (oral and through the skin) are less than those of DDT."

☐ **4. Is the insecticide's residue tolerance high?** Can it be used for close-to-harvest control? Because the Miller Amendment has set limits on insecticide residues, and because close-to-harvest insect control is often necessary, the residual activity of insecticides has become important. Malathion gives fast, thorough kills; then solves residue problems two ways. Its residues disappear rapidly; and it has a high residue tolerance. Thus, you can spray or dust malathion up to 72 hours from harvest of many crops. In fact, even between pickings and cuttings.

☐ **5. Is the insecticide compatible with fungicides, other insecticides?** Time and money do not permit a different spraying for each of your control problems. The best insecticide has to be a "good mixer" because more and more control programs and state recommendations call for combinations of two or more materials. Malathion is compatible with most fungicides and other commonly used phosphate and chlorinated insecticides.

☐ **6. Is the insecticide available in the form your equipment requires?** Does the formulation clog nozzles or tend to settle out? The right insecticide for you does the job with the least trouble, in the equipment you have. For example, while most formulations are suitable for high pressure equipment, emulsions should be used in low pressure sprayers. Many manufacturers package malathion in liquids, dusts and wettable powders, alone and in combination with other materials.

☐ **7. How does the insecticide affect fruit finish?** Under certain conditions, several phosphate insecticides may damage the finish of McIntosh and related varieties. Malathion is the specified phosphate in the fine finish program of many states because of its wide margin of safety to fruit and foliage.

On the next two pages is a chart of rates, timing and application techniques for malathion formulations including new uses for 1958.

1958 MALATHION GROWE

Thorough, full-coverage applica

FRUIT

PEST	AMOUNT: Emulsifiable Liquid Per 100 gals.	Wettable Powder 25% Per 100 gals.	Dust Per Acre	Residue Tolerance	Interval (Days) Between Last Application and Harvest
APPLES					
Woolly apple aphid Bud moth	1 pt.	2 lbs.	—	8ppm	3
Green apple aphid Rosy apple aphid	1½ pts.	2 lbs. 2½ lbs.	—	8ppm	3
Mealybug	1-2 pts.	2½ lbs.	—	8ppm	3
Mites such as: European red mite Clover mite *Willamette mite *Two-spotted mite	1-2 pts.	2-2½ lbs.	—	8ppm	3
*Make at least two applications 10-12 days apart in summer months.					
Codling moth Plum curculio Red-banded leaf roller	2 pts.	3 lbs.	—	8ppm	3
Forbes scale	1 pt.	2½ lbs.	—	8ppm	3
Make two or three thorough spray applications.					
These pests are also controlled by combining 2 lbs. Wettable Powder and 2½ lbs. 50% Methoxychlor WP or 2 lbs. 50% DDT, WP.					With DDT 30 Methoxychlor 14
Malathion Emulsifiable Liquid may cause injury to McIntosh and Cortland varieties in summer sprays.					
APRICOTS					
Codling moth Orange tortrix European Lecanium scale Soft brown scale, Aphids	1½-2 pts.	4 lbs.	—	8ppm	7
AVOCADOS					
Latania scale Greenhouse thrips Omnivorous looper Orange tortrix Soft brown scale	1½ pts.	3 lbs.	—	8ppm	7
CHERRIES					
Black cherry aphid	—	2 lbs.	—	8ppm	3
Black cherry aphid and Fruit tree leaf roller	1½ pts.	—	—	8ppm	3
Cherry fruit fly* Bud moth	1 pt.	2 lbs.	—	8ppm	3
*Repeat application every 10 days.					
Injury may occur on certain varieties of sweet cherries particularly in the Northwest.					
NECTARINES					
Plum curculio	2 pts.	3 lbs.	—	8ppm	7
Mites	1-2 pts.	2½ lbs.	—	8ppm	7
Parlatoria scale	—	2 lbs. + 1 gal. lgt.-med. oil*	—	8ppm	7
*Application of this mixture should be made only in the petal fall period.					
Malathion may cause fruit spotting on nectarines.					
PEACHES					
Mites such as: European red mite Two-spotted mite	—	2-2½ lbs.	—	8ppm	7
Make 2 or more applications as needed.					
Oriental fruit moth Plum curculio	2 pts.	3 lbs.	—	8ppm	7
San Jose Scale (California Only)	—	*SEE NOTE**	—	8ppm	—
*Prepare tank mix of 3 pounds 25% Wettable Powder plus 2 gallons oil emulsion and 4 pounds fixed copper per 100 gallons of water. Apply only when trees are dormant.					
These pests are also controlled by combining 2 lbs. Wettable Powder and 2½ lbs. 50% Methoxychlor WP or 2 lbs. 50% DDT, WP.					With DDT 30 Methoxychlor 14
PEARS					
Mites	1-2 pts.	2-2½ lbs.	—	8ppm	3
Pear psylla	1-2 pts.	2-2½ lbs.	—	8ppm	3
Mealybug	1-2 pts.	2½ lbs.	—	8ppm	3
Codling moth Plum curculio Fruit tree leaf roller Red-banded leaf roller	2 pts.	3 lbs.	—	8ppm	3
These pests are also controlled by combining 2 lbs. Wettable Powder and 2½ lbs. 50% Methoxychlor WP or 2 lbs. 50% DDT, WP.					With DDT 30 Methoxychlor 14
Injury may occur to Bosc pears under certain conditions in the Northeast using malathion sprays.					

ARROWS INDICATE CROPS WHICH RECEIVED NEW LABEL CLAIMS FROM THE USDA FOR 1958

FRUIT

PEST	Emulsifiable Liquid Per 100 gals.	Wettable Powder 25 Per 100 ga
PLUMS & PRUNES		
Mealy plum aphid	1 pt.	1 lb.
Plum curculio and Mealy plum aphid	See combination below	
Prunes: San Jose Scale (California Only)	—	*SEE NOTE**
*Prepare tank mix of 3 pounds 25% Wettable Powder pl Apply only when trees are dormant.		
Prunes: Bud moth	1 pt.	2 lbs.
These pests are also controlled by combining 2 lbs. We Powder and 2½ lbs. 50% Methoxychlor WP or 2 lb		
QUINCES		
Plum curculio Codling moth Oriental fruit moth	2 pts.	3 lbs.
Forbes scale	2 pts.	2½ lbs.
Mites	1-2 pts.	2-2½ lbs.
PECANS		
Aphids Spider mites	1-2 pts.	2-3 lbs.
Pecan nut casebearer* Pecan phylloxera**	—	3 lbs.
*After first generation eggs begin to hatch.		
**Early spring after unfolding pecan buds develop fro		
WALNUTS		
Walnut husk fly	—	8-10 lbs./500 Ga by air; 1-1½ by ground equip
Bait Sprays: Combine Staley's sauce base #2 or		
Aphids	—	4-8 lbs./400 Gal by air; ½-1 lb. ground equipme
Mites	—	4-8 lbs./400 Gal by air; ½-1 lb. ground equipm
BLACKBERRIES — BOYSENBERRIES — DEWBERRIES —		
Mites, Thrips, Leafhopper	1½ pts.	2 lbs.
Japanese beetle	1½ pts.	4 lbs.
BLUEBERRIES		
Cranberry fruit worm	—	2 lbs.
Apply spray at rate o		
Make first application at egg hatch and repeat applica have been made.		
Cherry fruit worm	—	4 lbs. per 2 gals. per a
Blueberry maggot	—	—
Repeat appli.atio		
CRANBERRIES		
Leafhoppers Black-headed fireworms	1½ pts.	2½ lbs.
Spittlebug nymphs Cranberry fruitworm	1½ pts.	2½ lbs.
CURRANTS — GOOSEBERRIES		
Mites	—	2 lbs.
Japanese beetle	—	4 lbs.
GRAPES		
Leafhopper	1½ pts.	1-1½ lbs.
Spider mites	1½ pts.	—
Make 2 or more appl		
Mealybugs	1½ pts. (50-100 gals.)	—
Injury may occur on Ribier g		
STRAWBERRIES		
Aphids Spider mites	1½ pts.	2½ lbs.

OWER'S GUIDE | PULL OUT . . . KEEP FOR HANDY REFERENCE

ull-coverage applications should be made.

	AMOUNT			
ifiable uid 0 gals.	Wettable Powder 25% Per 100 gals.	Dust Per Acre	Residue Tolerance	Interval (Days) Between Last Application and Harvest
	1 lb.	—	8ppm	3
	combination below	—	8ppm	—
	SEE NOTE*	—	8ppm	—
% Wettable Powder plus 2 gallons oil emulsion per 100 gallons of water. ant.				
	2 lbs.	—	8ppm	—
combining 2 lbs. Wettable oxychlor WP or 2 lbs. 50% DDT, WP.				With DDT 30 Methoxychlor 7
	3 lbs.	—	8ppm	3
	2½ lbs.	—	8ppm	3
	2-2½ lbs.	—	8ppm	3
	2-3 lbs.	—	8ppm	—
	3 lbs.	—	8ppm	—
in to hatch.				
can buds develop from 1-3 inches of green growth.				
	8-10 lbs./500 Gals./A. by air; 1-1½ lbs. by ground equipment	—	8ppm	—
y's sauce base #2 or #7 (2 qts. per acre) to above dosages.				
	4-8 lbs./400 Gals./A. by air; ½-1 lb. by ground equipment	40-60 lbs. 4%	8ppm	—
	4-8 lbs./400 Gals./A. by air; ½-1 lb. by ground equipment	—	8ppm	—
S — DEWBERRIES — LOGANBERRIES — RASPBERRIES				
s.	2 lbs.	—	8ppm	7
s.	4 lbs.	—	8ppm	7
—	2 lbs.	—	8ppm	1
Apply spray at rate of 250 gals per acre. ch and repeat applications every 4 or 5 days until a total of 4 applications				
—	4 lbs. per 200 gals. per acre.	—	8ppm	1
—	—	25 lbs. 4%	8ppm	1
Repeat applications as needed.				
s.	2½ lbs.	50 lbs. by air 30-40 lbs. by ground machine 4 or 5%	8ppm	3
s.	2½ lbs.	—	8ppm	3
—	2 lbs.	—	8ppm	3
—	4 lbs.	—	8ppm	3
s.	1-1½ lbs.	20-40 lbs. 4% + sulfur	8ppm	3
s.	—	20-40 lbs. 4% + sulfur	8ppm	3
Make 2 or more applications as needed.				
s. 00 gals.)	—	—	8ppm	3
ay occur on Ribier grapes with Emulsifiable Liquid				
s.	2½ lbs.	40 lbs. 4 or 5%	8ppm	3

VEGETABLES

PEST	AMOUNT Emulsifiable Liquid Per 100 gals.	Wettable Powder 25% Per 100 gals.	Dust Per Acre	Residue Tolerance	Interval (Days) Between Last Application and Harvest
ASPARAGUS					
Asparagus beetle	2 pts. per acre	—	—	8ppm	3
Use in sufficient water for good coverage.					
BEANS					
Mexican bean beetle	1½ pts.	—	30-35 lbs. 4 or 5%	8ppm	1
Leafhopper	—	—	30-35 lbs. 4%	8ppm	1
Spider mites	1-1½ pts.	—	—	8ppm	1
Make 2 or more applications as needed.					
BEETS					
Aphids	1½-2 pts.	—	—	8ppm	7
BROCCOLI — CABBAGE — KALE — TURNIP — MUSTARD GREENS					
Aphids					3
Imported cabbage-worm Cabbage looper	1-2 pts.	2 lbs.	30 lbs. 4 or 5%	8ppm	7
BRUSSELS SPROUTS					
Aphids	1-2 pts.	2 lbs.	30 lbs. 4 or 5%	8ppm	7
CARROTS — RADISHES — PARSNIPS — SALSIFY — HORSE RADISH					
Aphids	1½-2 pts.	2 lbs.	30-35 lbs. 4%	8ppm	7
CAULIFLOWER					
Aphids	—	—	50 lbs. 4%	8ppm	7
CELERY					
Aphids Spider mites	1½ pts.	—	—	8ppm	7
COLLARDS — DANDELION — WATERCRESS — SWISS CHARD — PARSLEY					
Aphids	1½-2 pts.	2 lbs.	30-35 lbs. 4%	8ppm	7
CUCUMBERS — SQUASH — MELONS					
Aphids Spider mites	1½ pts.	—	30-35 lbs. 4 or 5%	8ppm	3
Leafhopper on melon	—	—	30-35 lbs. 4 or 5%	8ppm	3
Do not apply malathion to cucurbits unless plants are dry.					
EGGPLANT					
Aphids Spider mites	1 pt.	2 lbs.	—	8ppm	3
Lace bug	3 pts.	—	—	8ppm	3
ENDIVE (Escarole)					
Aphids Mites	1½-2 pts.	2 lbs.	30-40 lbs. 4%	8ppm	7
GARLIC — LEEKS — SHALLOTS					
Aphids Thrips	1½-2 pts.	4 lbs.	—	8ppm	3
KOHLRABI					
Aphids	1-2 pts.	2 lbs.	30 lbs. 4%	8ppm	7
LETTUCE					
Aphids	2 pts.	2 lbs.	30-40 lbs. 4%	8ppm	Leaf 10 Head 7
Mites	—	—	30-40 lbs. 4%	8ppm	
Cabbage looper	—	—	30-40 lbs. 4%	8ppm	
Leafhoppers	2 pts.	—	—	8ppm	
ONIONS					
Thrips	1½ pts.	4 lbs.	30-40 lbs. 4 or 5%	8ppm	3
PEAS					
Pea aphid	1½ pts.	—	25 lbs. 4 or 5%	8ppm	3
PEPPERS					
Aphids	1 pt.	2 lbs.	—	8ppm	3
POTATOES					
Aphids Leafhopper	1 pt.	2½ lbs.	25-30 lbs. 5%	8ppm	3
PUMPKINS					
Aphids, Mites Leafhoppers	1½ pts. —	—	30-35 lbs. 4%	8ppm	3
Do not apply malathion to cucurbits unless plants are dry.					
RUTABAGAS					
Aphids	1½ pts.	—	—	8ppm	3
SPINACH					
Aphids	2 pts.	—	30-35 lbs. 4%	8ppm	7
TOMATOES					
Spider mites	1½ pts.	2 lbs.	35-45 lbs. 4 or 5%	8ppm	3
Aphids	1 pt.	2 lbs.			
Tomato russet mite	—	2-4 lbs.			

PULL OUT...KEEP FOR HANDY REFERENCE

Thorough, full-coverage applications should be made.

PEST	AMOUNT Emulsifiable Liquid Per 100 gals.	Wettable Powder 25% Per 100 gals.	Dust Per Acre	Residue Tolerance	Interval (Days) Between Last Application and Harvest
CITRUS Grapefruit — Lemons — Limes — Oranges — Tangerines — Tangelos — Kumquats					
California red scale Yellow scale Purple scale Black scale (single brooded) Soft scale Citricola scale	1-1½ pts.	2½-3½ lbs.	—	8ppm	7
Florida red and purple scales (light and medium infestations)	2 pts.	3 lbs.—light 3-5 lbs.—medium	—	8ppm	7
Thrips Dosages per acre ➔	2½ pts. per 200 gals.	6 lbs.	—	8ppm	7
Green citrus aphid	—	1-2 lbs.	—	8ppm	7
Mediterranean Fruit Fly	—	2-3 lbs.* per acre	—	8ppm	3

*Add 1 pound of yeast hydrolysate or 1 quart of sauce base No. 2. Use sufficient water for good coverage by ground or air equipment. Malathion may be toxic to certain species of fish, particularly in shallow water.

Make no applications when trees are in bloom.

For further information on use of malathion, either alone or in combination with petroleum oil, parathion or other materials, see local agricultural authorities.

FLIES

FOR USE IN AND AROUND BUILDINGS WHICH HOUSE DOMESTIC ANIMALS, AROUND YARDS, AROUND HOMES, AND AROUND MEAT PROCESSING ESTABLISHMENTS

STRAIGHT MALATHION SPRAYS			BAIT SPRAYS (WITH SUGAR)		
			Add		
Amount Spray	Amount Emulsifiable Liquid	Amount 25% Wettable Powder	Sugar	or	Molasses* or Corn Syrup
2½ gals.	1 cup	1 lb.	1 cup		1 cup
12 gals.	1 qt.	5 lbs.	2½ lbs.		1 qt.
100 gals.	2 gals.	40 lbs.	20 lbs.		2 gals.

*Use unsulfurized molasses.

Apply the spray at the rate of one gallon per 1,000 square feet on painted surfaces and two gallons per 1,000 square feet on unpainted surfaces where flies alight or congregate. Use 3 gallons of malathion Emulsifiable Liquid or 40 lbs. of 25% Wettable Powder with 40 lbs. of sugar per 100 gallons if fly population is severe. In most cases, adding molasses or sugar to the spray prolongs the insecticidal activity of malathion and serves as fly attractant. Do not use in milk rooms. Avoid contamination of feed and food products, also drinking fountains and feed troughs. Remove lactating animals and calves under one month of age from building before treating. Do not leave within reach of children. Do not use in rooms where edible products are handled.

OTHER USES FOR MALATHION

Direct application on livestock

Malathion can now be applied directly on cattle, hogs and poultry for control of external parasites: lice, ticks and horn flies on beef; non-lactating dairy cattle; lice on hogs; mites and lice on poultry. Malathion's *direct application* control of pests on livestock, plus its effectiveness against flies, in and around stock buildings, now gives farmers *one* insecticide for control of major insects.

Ornamentals and Greenhouses

Malathion controls practically all insects attacking ornamentals. In aerosol form, it is widely used for control of greenhouse pests.

Field Crops

Malathion is now recommended on clover, alfalfa, grains, cotton and tobacco for control of many insects.

Household use — Pets

Malathion can be used indoors for control of roaches, silverfish and many other household pests. Applied directly on pets and in their quarters, it controls fleas and ear mites.

Write for more information on these uses for malathion

FORMULATIONS

American Cyanamid produces and sells technical malathion to over 100 well-known manufacturers. These manufacturers formulate malathion *under many brand names,* in emulsifiable liquids containing four or five pounds of malathion per gallon; wettable powders containing 25% malathion; and dusts containing 4% and 5% malathion.

WANT MORE COPIES?

Write to: American Cyanamid Company, Insecticide Dept. I, 30 Rockefeller Plaza, New York 20, N.Y. for more copies of this 1958 Malathion Grower's Guide.

Please include your address and the number of additional copies you want.

No "whiskers" on my berries

No Sir, none! Berries, you know, are like folks. They've got real tender skins and are sensitive to temperature change.

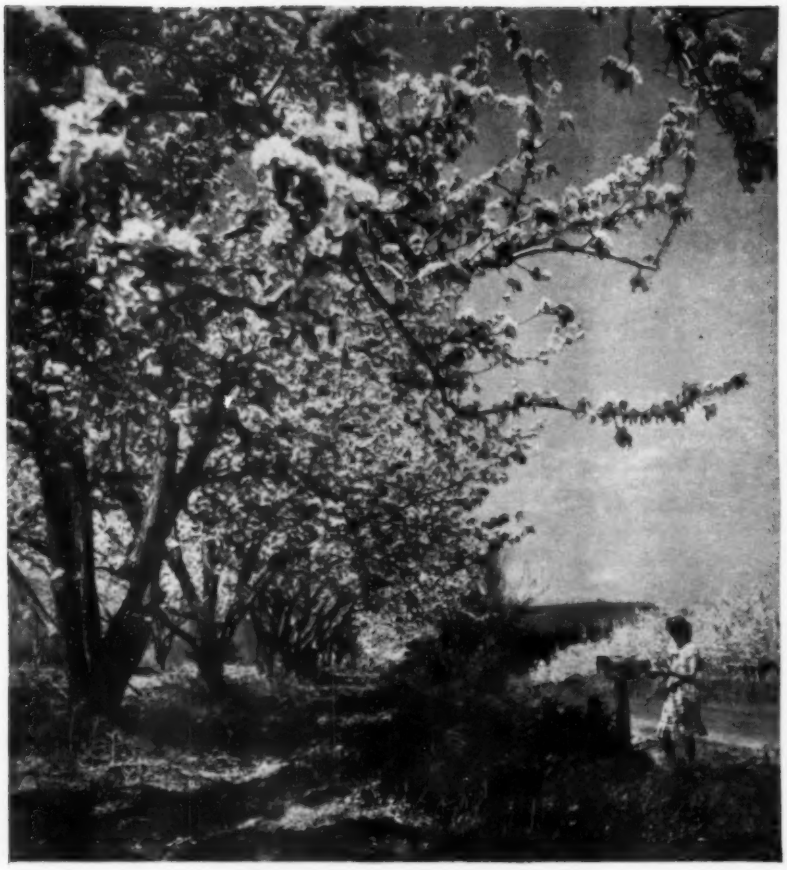
That's why I always truck out my berries cooled with a Thermo King. It gets 'em to market the way we picked 'em . . . bright red, shiny, firm, green stemmed. I guess the reason is because it has no constant blowing to dry the berries. And it keeps an even temperature to protect berries from "whiskers." Maybe you've seen whiskers but didn't recognize 'em. They're that white mold that grows on berries when they aren't cooled right or kept fresh enough.

So believe you me, strawberries need cooling you can count on. That's why I use Thermo King for cooling. 'Course maybe you don't ship berries like me. But if you ship perishables, you'd be smart to look into Thermo King.

THERMO KING

44 South 12th Street Minneapolis 3, Minnesota

British Commonwealth: Canadian Thermo Control Co., Ltd. Montreal, Quebec



Captan 50-W Spray Program Controls Major Fruit Diseases All Season Long

Low-cost control offers you bigger profits every year

An orchard spray program based on Captan 50-W, the all-season fungicide, controls major fruit diseases from pre-pink to harvest.

For example, scab and powdery mildew may raise havoc in your orchards. To control both diseases, simply combine Captan 50-W and microfine sulfur (at about half dosage each) in all your pre-bloom sprays.

Every dollar you invest in Stauffer's new spray program pays off in higher yields, better quality fruit and bigger profits . . . this year, next year and in years to come.

Your local Captan 50-W dealer has free Stauffer Spray Charts for apples and peaches. They tell you what sprays to use to control every fruit pest from apple scab to sooty blotch. They also contain many helpful hints about the best materials to use for special problems.

Why wait? Ask your dealer today for your free Stauffer Captan 50-W Spray Charts. Or write: Stauffer Chemical Company, 380 Madison Ave., New York 17, N. Y.

Stauffer CHEMICALS SINCE 1885

New York • San Francisco • Houston
Omaha • Los Angeles • Tampa • North Portland • Weslaco • Lubbock • Harvey
North Little Rock

SELLING THE CROP

PROPOSED RELAXATION of grade standards from some quarters of the Florida citrus industry to permit greater utilization of "freeze-damaged" fruit is being strongly opposed by Florida Citrus Mutual, Lakeland. With an eye on the future acceptance of Florida's citrus, Mutual has announced its intention to maintain highest possible quality standards, in spite of the temporary setback. Concentrate and other products will continue to undergo close inspection.

"AS PERSONAL SELLING becomes of less and less importance, advertisers must step up preselling." This was pointed out by Gustav L. Nordstrom, executive director, Folding Paper Box Association of America, New York, N. Y., at a recent meeting of Chicago Federated Advertising Club. "Manufacturers should recognize this by giving added consideration to the function of a package as a means of recalling advertising sales messages that stirs a desire to buy at the point of purchase," Nordstrom said.

DISPLAY MATERIAL featuring dental health messages sparked apple sales during National Children's Dental Health Week February 2 to 8. Photo shows poster distributed by International Apple Association. The promotion was approved by the American Dental Association.

A study by the Washington State Apple Commission which included three market areas in Montana showed that apple movement increased 11% where the market featured the dental health theme. Studies also indicated that older women rate apples more healthful than younger shoppers.

CLING PEACHES, cottage cheese, and Fritos are a combination being pushed this month in the biggest cottage cheese advertising and promotion campaign in the history of American Dairy Association. Co-operating advertisers are Cling Peach Advisory Board and The Frito Company. The "Work-Free Salad" theme is being featured on radio and television, in magazines and newspapers, on billboards, as well as at point-of-sale advertising in grocery stores and on home delivery routes.

INCLUDE A GIMMICK of some kind in your apple package—a balloon or funny paper—to attract the children, suggests Max Brunk, Cornell marketing specialist. Young couples with children make up most of the apple grower's market, says Brunk. Studies show, he says, that 29% of the people buying apples are under 30 years old, 31% over 50, and that a higher proportion of young people buy apples than any other fruit except tangerines.

FLORIDA-GROWN vegetables and tropical fruits are being featured in colorful displays at some 3000 retail food outlets in the state. The Third Annual Festival of Florida Products began February 27 and will continue to March 8. The promotion is designed to "acquaint both residents and visitors with the importance and abundance of Florida's agricultural food products," said Roy Vandegrift, Jr., president of Florida Fruit & Vegetable Association, a charter sponsor of the festival.

IN HIS PRESIDENTIAL address to the Kentucky State Horticultural Society, Boynton Merrill, Jr., of Henderson, gave some down-to-earth advice. "Retailers don't establish demand," he said, "they satisfy it and it is up to fruit growers to take the responsibility of growing and selling their fruit. If we are going to change the customer's habits," Merrill explained, "it will have to be a change away from competitive products."

He suggested selling slogans like: Soft drinks are good, but peaches are a sweet luxury. Peaches, the queen of fruits—luscious, rare, delicate. Peasants eat potatoes, princes dine on peaches. Parsnips are healthy, but peaches give you a thrill. Bugs Bunny eats carrots, but Helen Hayes eats peaches.

A campaign of this type should leave the customer feeling inadequate if he failed to eat at least several peaches a day.

APPLE GROWERS are sitting on a potential gold mine that could be turned into usable cash if they can get together in a united effort to promote their crop. This is what James Morton, Waverly Growers Co-operative, Waverly, Fla., told Western New York Apple Growers Association at its recent annual meeting in Rochester. Advertising, he pointed out, can be an effective part of their program if it is accompanied by: 1) close attention to cultural methods for producing the largest crops of the highest quality apples at the lowest possible cost; 2) high standards of maturity, quality, appearance, packaging, and marketing methods; 3) organization to finance the program so that each box of apples in the area pays its share of advertising costs.

AN AGREEMENT between the United States and the United Kingdom provides for the sale of $7,950,000 worth of U. S. fruit and fruit products. The list of commodities includes dried prunes, canned peaches, mixed fruits, cranberries, grapefruit sections, fresh lemons, and citrus juices.

AN INSTANT orange-flavored breakfast beverage in powder form which is mixed with cold water will soon appear on the market. Each serving is reported to contain more vitamins C and A than the equivalent amount of frozen orange juice.

Announcing The FIRST High Concentrate Axial Flow Sprayer Operated from the Power Take-Off Shaft to Give You the Lowest Priced Air-Blast Sprayer on the Market

MODEL CPS — *Sprayer-Duster shown with special two-way Fish Tail nozzle for spraying grapes. Also ideal for orchard and row crop work.*

See this NEW Buffalo Turbine Sprayer-Duster at all the Winter Agricultural Shows.

Now you can have all the advantages of Turbo-Spraying and Turbo-Dusting at a new low, in cost. The streamlined, totally enclosed CPS Sprayer-Duster delivers full power for long carry and wide-range coverage. The Axial Flow Blower is operated from the power take-off of your tractor. All controls are within easy reach from the tractor seat.

With the Buffalo Turbine Sprayer-Duster you can dispense liquid or dust separately or both at the same time. The powerful "Turbulent Air" blast gives greater, *controlled* coverage than ever before attained.

Write for Complete Specifications and Prices.

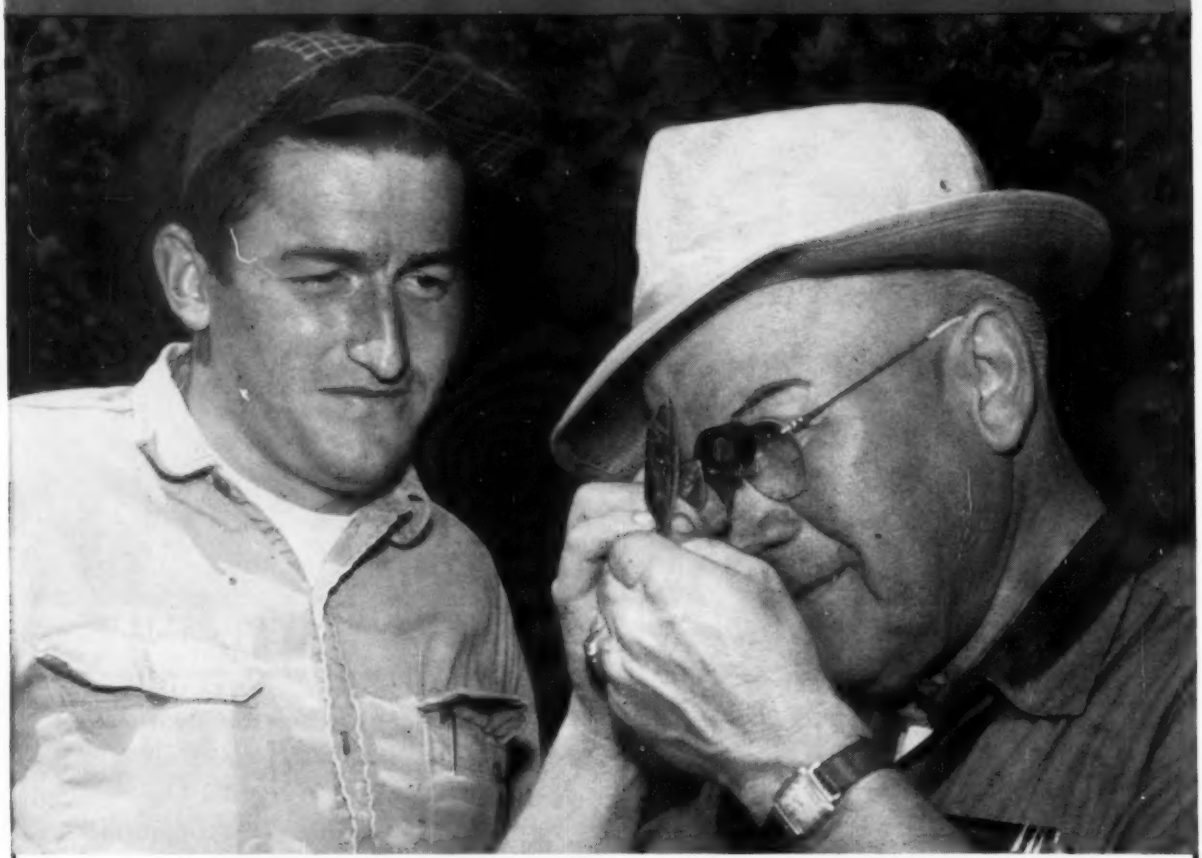
- ★ Operates from the rear power take-off of any two plow tractor.
- ★ Velocities from a gentle breeze to 180 M. P. H.
- ★ 14,000 cu. ft. of air per minute.
- ★ Turbo-Dust or Turbo-Spray separately or both at the same time.
- ★ Low and streamlined. Ideal for vineyard and orchard work.
- ★ Tested for 2 years in actual field operations before placing on the market.

BUFFALO TURBINE

BUFFALO TURBINE
AGRICULTURAL EQUIPMENT CO., INC.
67 INDUSTRIAL ST. GOWANDA, N. Y.

STOP MITES NOW!

Apply new discovery, ORTHO MITOX, now to control mites during growing season



Grower reports excellent control of red mite with ORTHO® MITOX

"In 1957 ORTHO MITOX gave us an excellent control of red mite in a single application as the trees were coming into bloom," says James L. Oakes, farm manager of the Leonard Oakes Estate, Lyndonville, N.Y., shown (left) with ORTHO Fieldman A. B. Stanley. "ORTHO Fieldmen are obliging when problems arise and are always interested in finding solutions to those problems."

Facts you'll want to know about this new ORTHO miticide

Q. Why spray now with ORTHO MITOX?

A. Control of red spider mites is largely obtained by destruction of egg populations. This early season control prevents late season build-up of red spider mites.

Q. How does it work?

A. ORTHO MITOX is a residual miticide, which can be applied to apples, pears, almonds, apricots, cherries, plums, prunes and peaches as a delayed dormant or pre-bloom spray.

Q. How long does it last?

A. One application will do the job. Build-up of red spider mites has been prevented for as long as 3 months.

Q. Is ORTHO MITOX compatible with other chemicals?

A. Yes, all of these insecticides and fungicides: DDT, lindane, captan, TEPP, BHC, parathion, malathion, ferbam, wettable sulfurs, lime sulfurs, mercurial and oil sprays.

Q. How can I fit ORTHO MITOX into my spray program?

A. For full, and detailed information, call your local ORTHO Fieldman today. There is no obligation.

STOP MITES NOW!

Tests prove new ORTHO MITOX provides outstanding results

(The data listed below has been compiled from various Experiment Station reports and Calspray Field Research reports for 1957. ORTHO MITOX 40 wettable was used at the rate of 1 pound to 100 gallons.)

LOCATION	MATERIALS	TIME OF APPLICATION	LENGTH OF TEST (IN DAYS)	AVG. NO. MITES PER LEAF
N.Y. STATE AGR. EXPT. STATION, GENEVA, N.Y.	MITOX	Pink	91	2.1
	Check		91	59.0
CALSPRAY NEWFANE, N.Y.	MITOX	Pink	82	0.6
	ORTHOL-D (Superior Oil)	Delayed Dormant	82	1.2
CALSPRAY NEWFANE, N.Y.	MITOX	Pink	82	0.0
	ORTHOL-D (Superior Oil)	Delayed Dormant	82	0.6
MARYLAND AGR. EXPT. STATION, HANCOCK, MD.	MITOX	Pink	95	1.5
	Other material	Pink	81	15.1
	Check		71	63.9
MAINE AGR. EXPT. STATION, ORONO, MAINE	MITOX	Pre-Pink	84	2.2
	Superior Oil	Delayed Dormant	98	5.4
	Other material	Pink, Petal Fall	72	4.7
	Check		84	26.3
VIRGINIA AGR. EXPT. STATION, WINCHESTER, VA.	MITOX	Pink	70	0.4
	Other material	Pink	70	0.9
UNIVERSITY WISCONSIN STURGEON BAY, WISC.	MITOX	Pink	84	0.0
	Check		84	18.5
CALSPRAY MARLTON, N.J.	MITOX	Pink	61	0.4
	Other material +TEPP	Pink, Petal Fall	61	20.5
CALSPRAY MARLTON, N.J.	MITOX	Pink	70	0.6
	Check		70	35.0
CALSPRAY ST. LOUIS, MO.	MITOX	Pink	91	0.0
	Check		91	4.0
OHIO AGR. EXPT. STATION, WOOSTER, OHIO	MITOX	Pink	101	3.9
	Superior Oil	Delayed Dormant	101	8.9
	Check		101	15.5
*NORTHERN CALIFORNIA	MITOX	Pre-bloom	21	0.1
	Check		21	2.1
				% LEAVES INFESTED
WASHINGTON	MITOX	Pink	60	1
	Dormant Oil-3%	Delayed Dormant	60	12
	Check		60	14
WASHINGTON	MITOX	Pre-bloom	60	0
	Check		60	32

*Northern California test conducted on Plums for Brown Almond Mite control. All other tests conducted on Apples for European Red Mite control.

Recommended by many fruit growing states

The following states have recommended the use of MITOX in the pre-bloom sprays for the control of European red mites in 1958*: Pennsylvania, Maryland, Virginia, New Jersey, Maine, Massachusetts, New York, Ohio, Wisconsin, Indiana, Kentucky, California, Washington and Utah. **As of January, 1958*

A complete ORTHO program can give you more crop protection—higher yields, better prices

When you buy the ORTHO program, all the personal, on-your-ground technical advice and services of your ORTHO Fieldman are provided gladly and without any extra charge. Too, with ORTHO, you're associated with the leader. An ORTHO program gives you the benefit of *all* the technical background—all the laboratory and field research—and *all* the formulating skills that have made ORTHO the number one line of agricultural chemicals in America today.

Scientifically trained Fieldmen located in all of the nation's fruit growing areas.

Executive Offices: Richmond, Calif., Washington, D.C. • District Offices: Haddonfield, N.J.; Springfield, Mass.; Medina, N.Y.; Columbia, S.C.; Orlando, Fla.; Maumee, Ohio; Memphis, Tenn.; Shreveport, La.; Maryland Heights, Mo.; Portland, Ore.; Phoenix, Ariz.; Salt Lake City, Utah; Sacramento, Fresno, San Jose, Whittier, Calif.

ON ALL CHEMICALS, READ DIRECTIONS AND CAUTIONS BEFORE USE

ORTHO®

Helping the World Grow Better

California Spray-Chemical Corp.
A Subsidiary of California Chemical Company

T.M.'S REG. U.S. PAT. OFF.: MITOX, ORTHOL-D

ONE OR BOTH SIDES

WEED AND BRUSH CONTROL

SPRAY FARM ANIMALS

CLEANING EQUIPMENT

WHITEWASHING

FIRE PROTECTION

Now you can spray apples, peaches, cherries with a big volume high velocity air stream—35,000 cfm. with the Hardie Duo-Fan Model DF-24B or 50,000 cfm. with the new Hardie DF-26D . . . Use either concentrate or dilute spray . . . Enjoy absolute pest control at lowest cost per acre . . . The higher price you get for quality fruit pays for the sprayer . . . You can also spot spray with a hand gun . . . Spray shrubs, gardens, weeds, brush . . . Apply insecticides, liquid fertilizer, disinfectants . . . Flush animal stalls, pens . . . Whitewash buildings, fences . . . Clean tractors, trucks, autos . . . Put out fires.

You can do all this with one sprayer—the 2-fan Hardie Duo-Fan Model 24B or 26D designed, built and priced to give the grower both air stream and high pressure spraying in one compact, streamlined, Hardie quality unit. It's two sprayers for the price of one. Write for literature. Ask your dealer.

OVER 80,000 CUBIC FEET OF AIR PER MINUTE

If you have a big acreage pest control job in orchard or grove, you need the magnificent new Hardie Duo-Fan Model DF-40, delivering more than 80,000 cubic feet of air per minute—the largest air stream sprayer ever built, and the most modern. Another model, the Hardie Duo-Fan Sprayer Model 26D, is especially designed for average fruit acreage. Delivers air at 50,000 cfm. Hardie also builds High Pressure Sprayers for orchard and row crop spraying in a wide range of sizes and styles.

HARDIE
PEST CONTROL EQUIPMENT
• SOLD AND SERVICED ALL OVER THE WORLD

Our 60th Year
1898—1958

The Hardie Mfg. Company, Dept.AF,
Hudson, Michigan
Please send me
☐ Air Stream Sprayer Catalog. ☐ Have salesman call.
NAME_____
ADDRESS_____
CITY_____STATE_____

THE QUESTION BOX

Don't be perplexed! Send us your questions—no matter how big or small. A three-cent stamp will bring you an early reply. Address: The Question Box, AMERICAN FRUIT GROWER, Willoughby, Ohio.

BLACK PLASTIC

Where can I buy black plastic mulch used by strawberry growers mentioned in your October issue?—*Alabama.*

Black polyethylene film is available from American Associated Cos., Red Bank, N. J.; Chester Packaging Products Co., 684 Nepperhan Ave., Yonkers 2, N. Y.; and Rough Brothers, 4229 Spring Grove Ave., Cincinnati 23, Ohio; Science Products Co., 1230 E. 63rd St., Chicago 37, Ill.; Cincinnati Cordage & Paper Co., E. Wayne & Scott St., Lima, Ohio; and Panogen, Inc., Ringwood, Ill.

STRAWBERRY VARIETIES FOR ARIZONA

Which strawberry varieties are recommended for the Phoenix area?—*Arizona.*

Most commercial strawberry growers in that area grow the Arkansas strain of Klondike. Other varieties are being tested and one or two look fairly good, but so far none has proven superior to the Klondike.

PRUNING BULLETIN

Where can I obtain information on pruning fruit trees?—*North Carolina.*

Write Superintendent of Documents, Government Printing Office, Washington, D. C., and ask for Cat. No. A1.9:1870 entitled *Pruning Hardy Fruit Plants.* Send 20 cents (not stamps) to cover cost. Also, *The Pruning Manual* by E. P. Christopher, is available from Book Department, AMERICAN FRUIT GROWER, Willoughby, Ohio, for $5.00.

Your experiment station at Clemson will also be able to send you material.

CHELATED COMPOUND

Would it be worth the added work and expense to use a chelated compound on my blueberries? —*Massachusetts.*

According to W. J. Lord, extension fruit specialist, University of Massachusetts, the use of chelated iron has given only fair results which were very slow to appear. Although this material has given dramatic results on blueberries in other areas, in Massachusetts its use is not recommended as yet. One-half to one teaspoonful per bush is suggested for trial. Sulfate of ammonia as the source of nitrogen usually helps.

BARK GRAFTING

In looking over the March issue of last year, I came upon Carl J. Hansen's fine article on bark grafting. Is this method applicable to pear and apple trees?—*Missouri.*

Mr. Hansen advises that bark grafting is a good method to use on apples and pears. However, these two species are easy to graft, and all the common methods of grafting are usually satisfactory.

GRAFTING WAX

How can I make grafting wax?—*Nebraska.*

Use 5 pounds resin, 1 pound beeswax, ½ pound lampblack or powdered charcoal, and ¼ pint raw linseed oil. Melt the resin, add beeswax and melt, add linseed oil, remove from fire, add the lampblack a little at a time, stirring constantly. Cool in shallow pan and break up later into pieces of wax as needed.

You can also purchase Static Asphalt Emulsion from your local supply store. This is a very satisfactory material and has largely replaced grafting wax.

Profit Stealer!

Cancel out Plum Curculio with dieldrin

Plum curculio and other cat-facing insects cost growers millions of dollars worth of marketable fruit each season. You can protect your fruit profits by knocking out these pests with powerful dieldrin.

Dieldrin is the answer to the fruit growers' need for an economical plum curculio control. Its killing action is long lasting. Many days after application, it puts an end to cat-facing insects no matter how they contact it.

You can apply dieldrin as a spray during pre-bloom or post-bloom periods. For most effective results, check the recommendations of state and federal authorities for the use of dieldrin in your area.

This season, get bigger yields of top-quality fruit. Stop plum curculio and other cat-facing insects with dieldrin. Dieldrin is available under well-known brand names from your insecticide dealer. See him today.

SHELL CHEMICAL CORPORATION

AGRICULTURAL CHEMICAL SALES DIVISION
55 Marietta St. N. W., Atlanta 3, Georgia

SHELL

Stone Fruits

PLUMS

Worth Trying

FOUR varieties of plums that growers may want to try are Stanley, Albion, Hall, and American Mirabelle. Stanley is a midseason prune-type plum and is already widely grown in place of Italian Prune. The other varieties are now grown on a limited scale only. All four are introductions of Cornell fruit breeders at the Geneva, N.Y., experiment station.

Several as yet unnamed selections under test at the station show promise but they will not be named until more is known about their performance. Limited stocks of three of these selections are available for trial, on a restricted basis, from the New York State Fruit Testing Association at Geneva.

One of the varieties is a large, reddish-blue freestone plum that ripens about a week before Stanley. It is expected to have value for roadside stands or local fresh fruit markets. The second is a late season prune-type plum, ripening three to four weeks after Stanley. It is described as having good quality and as being self-fruitful. It may have value for prolonging the season for prune-type plums. The Italian Prune variety figures in the parentage of both of these two selections.

The third selection comes from a cross between Tragedy and Early Laxton and is an early, black, prune-type plum that ripens in mid-August.

The New York station also has under test an early prune-type variety from Oregon and a productive late selection from the Vineland Experiment Station in Ontario, Canada. Both show promise.

CHERRIES

Wind Machines

SINCE you can't move the orchard up into higher locations on frosty spring nights, perhaps you can move the higher and warmer air down into the lower and colder portions of the orchard.

That is what several northwestern Michigan fruit growers did last spring under the direction of Dr. Clarence Hansen, of the agricultural engineering department, Michigan State University. Fortunately, a local manufacturer of rotor blades in Traverse City was willing to cooperate in this venture.

Helicopter rotor blades, which pull air downward, were mounted on 35-foot towers in a couple of orchards. Farm tractors are used to power the rotor blades, with car differentials for transmission of power to the blades on top of the tower.

One commercial wind machine was purchased at considerable greater expense for trial by an Empire fruit grower. This machine, mounted on top of a permanent tower 35 feet high, uses two conventional airplane blades, and is powered by two heavy duty Ford truck motors mounted opposite each other. The entire unit slowly revolves on top of the tower.

Helicopter rotor blades mounted on tower in orchard of Don McLachlan and Sons, Kewadin.

Experience during 1957 reveals that the machines are quite successful. Growers hasten to admit, however, that there is one type of spring frost for which they have no defense. This is the high-wind, low-temperature freeze which affects the higher orchard locations as well as the lower ones.

The Frederickson farm at Empire, however, reports that the past spring proved to be normal in their orchard, which had a history of frost damage for many years.

Temperatures fell below 32° on 10 nights during the critical swollen bud-and-bloom stage. On seven of these nights, the commercial wind machine was operated from two to seven hours per night. On three of the coldest nights, supplemental orchard heaters which burn about

POLLEN

Recent Nova Scotia Agric. Bulletin No. 67—"Under good conditions a single colony of BEES, supplied with properly handled processed pollen in BEEHIVE INSERTS, may effectively cross-pollinate several acres of orchard in a single day."

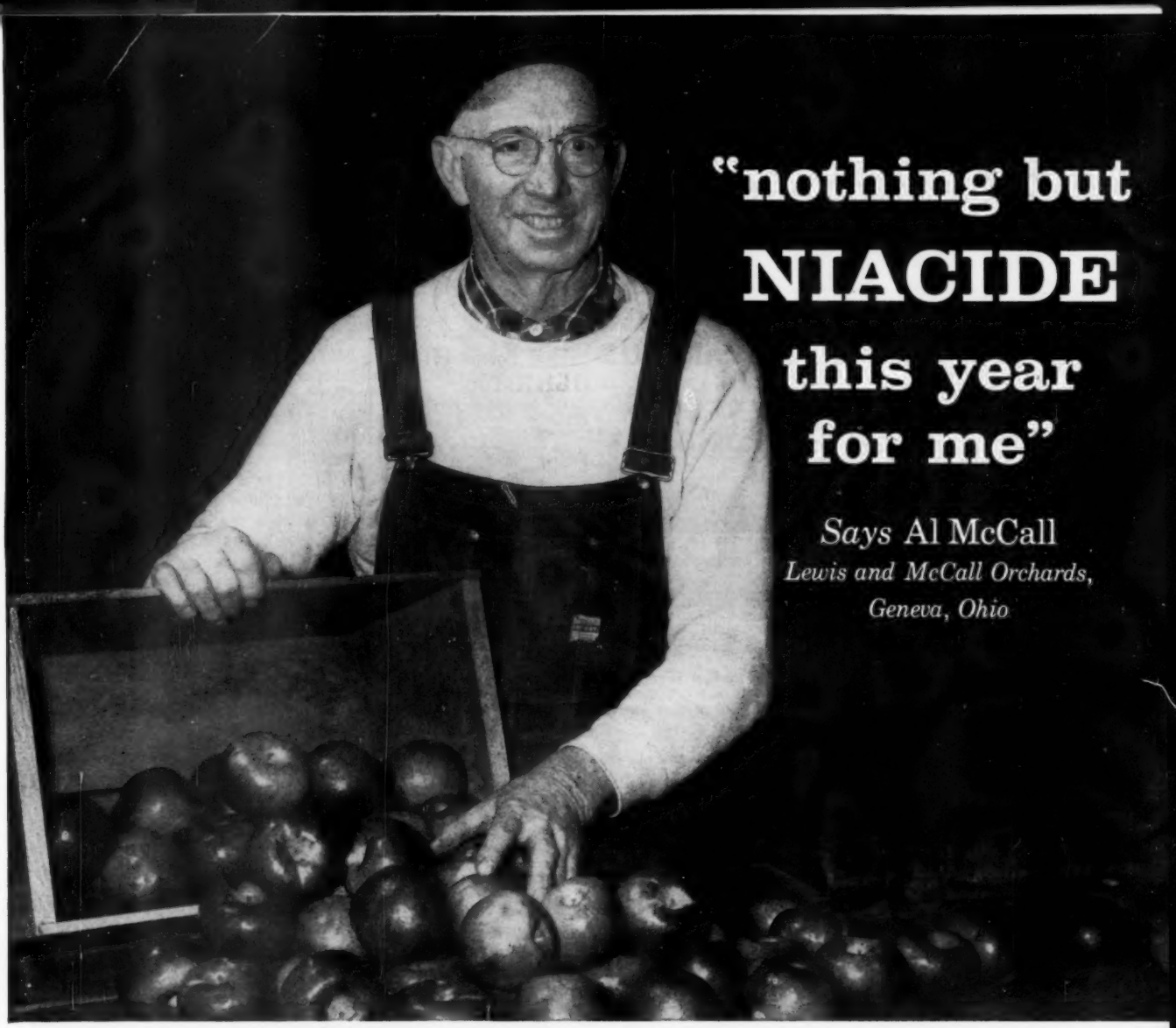
HELP THE BEES
HELP YOU PRODUCE
A FULL CROP WITH
THE BEEHIVE INSERT

Pollens For All Methods:
- HAND BRUSH
- WAND
- HAND DUSTER
- POLE DUSTER
- AIRPLANE
- BEEHIVE INSERT

phone or write us for information L. C. ANTLES B.S., M.S. (Successful Orchardist)

FRUIT TREE POLLEN SUPPLIES CO.

P. O. Box 1243 · Wenatchee, Washington · Phones: 2-2905 or 2-6052



OHIO GROWER ENDORSES REMARKABLE NEW FRUIT FUNGICIDE

WHEN YOU BUY Niagara YOU BUY PROTECTION

NIACIDE

Al McCall (ex-big league pitcher) is just one of many growers who, after several years trial, say it's Niagara Niacide from now on. Why? Well, experience has shown that Niacide even under extreme weather conditions has completely controlled scab on all varieties. Its use has uniformly upgraded harvests by producing fruit of the finest finish and color. And Niacide is mild. It leaves no objectionable spots and is completely safe for all russet-susceptible varieties. So for a better crop and bigger profits, this year be sure to write Niacide into your protection program.

Putting Ideas to Work

fmc FOOD MACHINERY AND CHEMICAL CORPORATION

FOOD MACHINERY AND CHEMICAL CORPORATION

Niagara Chemical Division

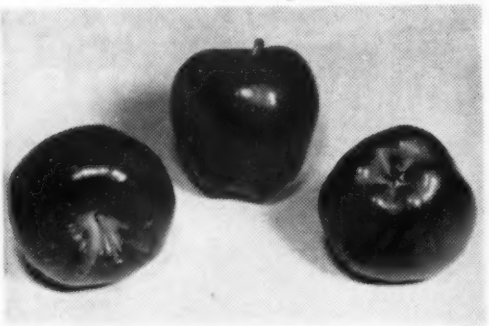
MIDDLEPORT, N.Y., RICHMOND, CALIF., JACKSONVILLE, FLA., WYOMING, ILL., NEW ORLEANS, LA., AYER, MASS., HARLINGEN, TEXAS, YAKIMA, WASH., GREENVILLE, MISS.

Canadian Associate: NIAGARA BRAND CHEMICALS, LTD., BURLINGTON, ONT.

PLANT RED KING®

the Champion of the New Red Sports

Brauns Variety Delicious (Plant Patent 1411)



the
PROVEN
Early
Coloring
RED DELICIOUS
Super Sport

- More fruit of Red King is now produced than all other new Red Delicious sports combined!
- More Red King trees are being planted than any other new Red Delicious sport!

Available in Standard, Semi-Dwarf and Dwarf Trees

PLANT THE BEST—PLANT RED KING*

*Trade Mark Registered U. S. Patent Office

Sold only by the Northwest's Largest Exclusive Fruit Tree Nursery

VAN WELL NURSERY

Box 858 • 1000 N. Miller St. • Wenatchee, Washington

The Best in Orchard Protection!

AIRMATE—
tested and approved for years. Husky, dependable 36 hp. air-cooled engine; 36" fan delivering 32,000 cfm; 300 or 400 gal. tank and famous Friend 25 or 35 gpm. pump. Nozzles, filters, connections included.

AIRMATE BLOWER ATTACHMENT—
convert your high pressure sprayer to an air-blast model. Direct controls for one-man operation. All nozzles, filters, connections supplied.

FRIEND MANUFACTURING CORP.
3 Prospect St., Gasport, N.Y.

Canadian Distributor—Lee Equipment Co., Stoney Creek, Ontario

¾ gallon of fuel oil per hour were lighted along the border and at regular spaces inside the orchard.

On the night of May 4, temperatures outside of the orchard fell to 21° F. Inside the orchard temperatures were held to 28° on this coldest night. Some frost damage to buds on the lower branches was noted. All orchard temperatures were taken at a 5-foot height.

One commercial machine appeared to effectively control the temperature over approximately a 12-acre area. A tremendous increase over past average production of red tart cherries occurred in this orchard last year.

The problem in the Don McLachlan and Sons orchard, of Kewadin, was a frost pocket which developed back of a roadside hedgerow of trees. Historically, the sweet cherries in this orchard froze to about the height of the hedgerow. A rotor blade mounted on a tower and powered by a farm tractor was able on one occasion to raise the temperature

Commercial frost prevention machine (National Frost Protection Co., Burbank, Calif.) is located on Fredrickson farm, Empire, Mich.

about 6 degrees within a comparatively short time. No supplemental heat was used. McLachlan points out that spring frosts seldom drop more than 4 or 5 degrees below the critical point.

Wright Stone and sons, of Thompsonville, own an apple orchard, a portion of which has a long history of frost injury during the critical early spring growth period. A rotor blade powered with a farm tractor, combined with auxiliary heat from orchard heaters, has saved the crop in the frosty portion of the orchard for a number of years. In 1949 and 1955, however, the combined efforts of wind machine and heaters were unable to cope with extremely low temperatures.

Commercial units providing their

From Du Pont... proven fruit fungicides that meet the need of every fruit grower!

• These six varieties were sprayed with Du Pont's new all-variety fungicide, "Thylate."

"THYLATE"—for top disease control at a new, low price

Du Pont Thylate® thiram fungicide, a proven fungicide among fruit growers, provides effective control of more apple diseases than any other registered fungicide. "Thylate" permits fine finish of all varieties, including Golden Delicious.

"Thylate" gives excellent protection against scab and rust . . . can be combined with mercury curatives for greater potency. "Thylate" is also highly effective as a buffer spray between sulfur and other summer fungicides.

Try "Thylate"—now available at a new reduced price to give economy-minded growers complete control of apple diseases—plus fine fruit finish.

"FERMATE" controls more diseases on more fruit than any other fungicide

Du Pont Fermate® ferbam fungicide is the most versatile fruit fungicide available . . . relied upon by growers for more than 16 years for effective disease control. It offers low-cost protection against scab and most other fruit diseases.

"Fermate" gives positive protection to apples, cherries, peaches, pears, raspberries, currants, cranberries, gooseberries, blueberries, boysenberries, blackberries, plums, prunes and dewberries.

Improve quality and bring down your cost-per-bushel disease control with "Fermate." Long-term tests have proven that "Fermate" promotes bigger yields . . . maintains orchard vigor.

• This McIntosh tree in the Davis Orchard, Bolton, Mass., has been protected against both scab and rust for 16 years with Du Pont "Fermate."

MARLATE® 50—for effective protection of apples and cherries

Kill both codling moth and curculio on apples—use Du Pont "Marlate" 50 methoxychlor insecticide. On cherries, "Marlate" 50 eliminates the need for arsenic . . . protects fruit from one spray to the next . . . doesn't contribute to dry stem.

PARZATE®—ideal "top-off" spray for late apple diseases

For late summer control of sooty blotch and flyspeck, use light-colored, mild Du Pont "Parzate" zineb fungicide to assure top fruit yields. "Parzate" leaves no harmful residue on fruit . . . can be applied right up to harvest time.

On all chemicals follow label instructions and warnings carefully.

DU PONT

REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
. . . *THROUGH CHEMISTRY*

POLLEN

***MAXIMUM CROPS**

It takes POLLEN to Develop maximum fruit crops.
It takes POLLEN to insure quality fruit.

***GOOD ORCHARD PRACTICE**

POLLEN is as essential to increased paying production as Fertilizer and insecticides.
POLLEN belongs in your orchard budget.

***POLLEN FOR ALL APPLICATIONS**

We prepare POLLEN for your preferred method of application.

Excellent results reported from pollen applied by the EZ pollen applicator (shown here) and application by hand brush, blower type sprayer, or airplane.

Please write for information and price lists of POLLENS and EZ pollen applicator.

Mina T. Firman
Best Quality Pollen
114 S. Main
EAST WENATCHEE
Phone
NOrmandy 2-2459

126 Highland Ave.
P.O. Box 996
CHELAN, WASH.
Phone 3-W

GRAVELY

Powerful 5-HP Gravely, America's most versatile small tractor, does every lawn, garden and field job *faster, easier, better!*

Choice of 30 performance-proved tools. All-Gear Drive, Power Reverse, Push-Button Starter optional.

New 24-page *"Power vs Drudgery"* Booklet shows how Gravely power and performance can solve YOUR problems. Write for it today!

GRAVELY TRACTORS, INC.
BOX 351 DUNBAR, W. VA.

FIELD-TESTED SINCE 1922

own power cost approximately $6000, while the farm tractor-powered rotor blade equipment can be set up for a cost of between $2000 and $3000.—*Clarence C. Mullett, Dist. Hort. Agent, Traverse City, Mich.*

PEACHES

Chemical Thinning

FINDING ways and means of completing early peach thinning has always been a major production problem. The job should be completed by five weeks after petal fall. In the case of large acreages, this time requirement is difficult to meet.

One of the first materials tried was NAA (naphthaleneacetic acid). While generally effective in reducing set, when applied as late as four to five weeks after petal fall there usually was some killing of terminal shoot growth and yellowish foliage. Its general use commercially is not on the increase.

Dinitro materials had been used quite widely on apples with considerable success. These materials have also been tried in most commercial peach areas. Dr. L. P. Batjer, of the USDA at Wenatchee, Wash., reports that use of dinitros in his field has never resulted in overthinning, but in some seasons the actual thinning action was scarcely worth the cost of materials and application labor. He stresses the necessity of making two separate and carefully timed sprays: the first in late pink when the tips of the flower pistils are just appearing in the center of the blossom bud, and a repeat spray just prior to full bloom.

The disadvantage of all thinning sprays, which must be applied in bloom or petal fall, is the risk of freezing temperatures further reducing fruit set. However, there are many large peach areas which have ideal lake protection against spring frosts and, at least in such regions, brush-blossom thinning and chemical thinning in late bloom definitely deserve a trial on mature trees.

In 1953, C. A. Langer, of Michigan's department of horticulture, reported favorable results from the use of Chloro IPC when applied as late as 31 days after full bloom. Extensive tests in other states in the following few years brought out too many cases of reduced tree vigor and off-color foliage, as well as premature ripening and suture softening of the fruit. This material has not been recommended for further trial in Indiana, Kentucky, Pennsylvania, New York, Maryland, Massachusetts, or California.

In 1955, American Chemical Paint Co. offered a new material for experimental trial called ACP-Peach Thin No. 322, which contains the active ingredient naphthylphthalamic acid (NPA).

Edgerton and Hoffman, in New York, had promising results with this material in 1955 and again in 1956.

Over-thinning occurred on several varieties in both Kentucky and Indiana in 1956, mainly on Jubilee and young trees of Fairhaven. There was no lasting injury to the foliage and no injury to the fruit.

In 1957, Peach Thin No. 322 again gave definite thinning action on all varieties in field tests, provided that a period of approximately 35 to 40 days was allowed to elapse between applications of the spray and the check-up on per cent of fruit set.

However, in extensive tests carried on in the Cardinal Orchards, at Henderson, Ky., Frank Street reported visible thinning action within 15 days after spraying. His touch-up job of pole thinning on the sprayed plots required only a few minutes per tree.

For two consecutive seasons Peach Thin No. 322 has given promising results in the Street orchard and no doubt will be used on an increased acreage in 1958, provided no low temperature thinning of the fruit buds occurs prior to bloom.

In the Indiana field tests with Peach Thin No. 322, results in 1956 were quite promising, but in 1957 about 30 days were required following the spray application before actual fruit drop occurred. This is at least 10 days later than desirable, but as soon as the pole-thinning crews started their work they found that the sprayed blocks took approximately half as much time to thin per tree. During the early part of the pole-thinning period the saving in time was due mostly to the fact that many peaches were loose on the tree.

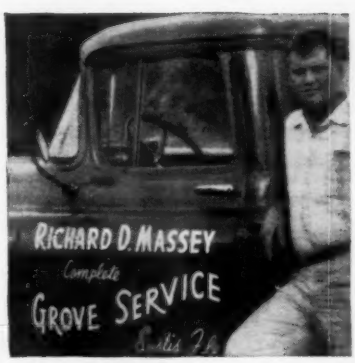
The 1957 plots in the LaPorte County peach area, near the Michigan state line, ran into serious overthinning with Peach Thin as a result of a low temperature period which occurred at the late in-bloom period, just as two growers were making the spray applications. Temperatures fell as low as 34° during the night of May 3. Plots sprayed from 7 to 10 o'clock the evening of May 3 and young Redhaven trees sprayed early the morning of May 4 were seriously over-thinned.

In contrast, a third grower in the same area delayed his spraying until 7 to 10 o'clock the evening of May 6 and had under-thinning. Tempera-

Economy plus air penetration sold Florida Grove Service operator an OLIVER Model 500 Spra-Blast

"I operate a complete grove management service. That's why I have to be sure of complete coverage and low costs. And I've found the ideal combination —the diesel-powered Model 500 Oliver Spra-Blast pulled by a diesel Super 77. Both units combined consume only 24 to 25 gallons of low-cost diesel fuel per day while putting on 45 tanks of material. The engine and fan are quieter and cost less to keep up, and at the same time give me excellent air penetration of all sizes of trees." Says:

Richard D. Massey
Eustis, Florida



This report is typical of the comments coming in from users of the Oliver Model 500 Spra-Blast. Where economy and complete coverage are important, orchard and grove operators are turning to Oliver.

Only Oliver offers diesel power at a cost comparable with most gasoline-powered sprayers. Gasoline models are also available—choose whichever saves you most. Both operate at 1850 rpm. for quiet, dependable service and low upkeep costs.

Oliver *extra advantages* at *no extra cost* include: 38-inch true airfoil design fan, choice of Marlow centrifugal or Iron Age piston-type pump, ultra-vision instrument panel, specially treated tank to resist corrosion, hydraulic hitch jack.

For *bigger profits* in 1958, arrange to try—arrange to buy a new Model 500 Oliver Spra-Blast. The Oliver Corporation, 400 West Madison Street, Chicago 6, Illinois.

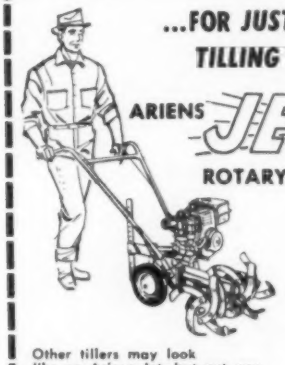
OLIVER **OLIVER**

"FINEST IN FARM MACHINERY"

Also Manufacturer of the Famous Oliver Outboard Motors

...FOR JUST EASY TILLING USE

ARIENS JET ROTARY TILLER



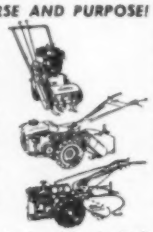
Other tillers may look like an Ariens Jet—but not one can equal it for engineering and trouble-free service! With free-swinging depth bar, fingertip controls, 8" to 20" tillage width, Ariens JET is made for Just Easy Tilling. 2¾ h.p. Briggs & Stratton engine; "Lo-Tone" muffler. Compare . . . and you'll choose the low-cost Ariens JET!

TILLERS FOR EVERY PURSE AND PURPOSE!

ARIENS YARDSTER — for home gardeners. 12" tillage. 2-speed wheel drive; all-season attachments.

ARIENS MULTIMATIC — for professional gardeners. 16" tillage. 2-speed, 2-direction operation with Insta-Hitch attachments.

ARIENS TRANS-A-MATIC — for heavy duty tilling. Two models: 20" or 28".



Write for free folder. Dealer inquiries invited.

Ariens | 139 Calumet St. Brillion, Wis.

Are You a Nursery Salesman?

Add to your income by selling AMERICAN FRUIT GROWER. Write today for our liberal nursery agents' plan. Address:

EDWARD MEISTER, Circulation Manager
AMERICAN FRUIT GROWER
Willoughby, Ohio

ACP PEACH-THIN 322

After three years of testing and evaluation by Colleges and Research Stations,

ACP PEACH-THIN

IS NOW AVAILABLE

FOR TRIAL USE

DURING 1958

Write

AMERICAN CHEMICAL PAINT CO.

Agricultural Chemicals Division
AMBLER, PA.

ture, however, did not fall below 50° F. during the night the sprays were applied.

It would seem from experience to date that the best time to apply Peach Thin No. 322 is at the late in-bloom stage. However, the 1957 LaPorte County results clearly indicate the danger of spraying when temperatures are below 45° F. or when a cold air mass is expected in a few hours. Delaying the spraying until several days after petal fall increases foliage injury and delays the return of normal leaf color but is preferable to applying Peach Thin during late blom if temperatures are below 45° F.

Varietal Differences. In the Kentucky and Indiana work in 1956 and 1957, there was quite a wide variation in varieties in their ease of thinning with ACP-Peach Thin No. 322.

Some varieties, such as Halehaven, Hale, Vedette, and Nectar, are relatively hard to thin and require dosages in the range of 250 to 300 ppm. Redhaven and Fairhaven are less difficult to thin and dosages in the range of 200 to 250 ppm have been most effective.

Golden Jubilee was easily thinned in both 1956 and 1957 at a dosage of 150 ppm, with some tendency to over-thin even at this low dosage. Summercrest lost its entire crop in the Bray Orchard in Kentucky in 1957 when sprayed with ACP-Peach Thin No. 322 at 300 ppm. Hale, Nectar, and Vedette in the same block were under-thinned at this same dosage.

Special care should be taken in spraying young trees. Three- to six-year-old Redhaven and Halehaven may be thinned at 150 ppm, but even at this dosage there may be some danger of over-thinning.

Gallonage per tree. One of the advantages of having field plots in a large number of orchards is the wide variation in results due to the gallonage per tree applied by different growers.

On mature peach trees the range in our work has been 1½ to 6 gallons per tree for a two-side spray. A grower using 6-gallon dosage should certainly use a lower concentration of Peach Thin.

Dr. L. J. Edgerton, of New York Experiment Station, Ithaca, reports a 1957 experience in which unsprayed Sunhigh trees set 36.3%, while trees receiving 100 ppm Peach Thin at *6 gallons per tree* set 18.2%, and trees receiving 200 ppm Peach Thin at *3 gallons per tree* set 16.8%. The plot receiving *6 gallons per tree* at 200 ppm set only 6.4%.

From results to date it would seem that a grower should use no less than 3 gallons of spray per tree.

Peach growers with large acreages of mature trees, and especially those in relatively frost-free locations, should give Peach Thin No. 322 a trial on a limited acreage for several consecutive years. On trees three to six years of age it is usually best to depend on hand, pole, or brush bloom thinning. Vigorous growing young trees, and especially the top third of such trees, often fail to set a heavy crop even though they may bloom heavily.

If fruit growers would be willing to co-operate with their state experiment station staffs in making limited tests of new spray chemicals, the entire industry, as well as the individual grower, would profit by the results. Actual grower results, based on HIS methods of spraying, are, after all, the "plum in the pudding!" —*C. L. Burkholder, Purdue Ag. Exp. Station, Lafayette, Ind.*

This is the last article to appear in AMERICAN FRUIT GROWER by the late C. L. Burkholder, who died last December.—*Ed.*

Finders Keepers?

FINDERS may be keepers but, according to the United States Patent Office, they are not necessarily discoverers.

Back in 1928, William W. Moore, a professional orchardist, recognized a 10-year-old tree in the yard of the Francis Miller residence as a new variety of peach, which had not occurred to the owner.

With Miller's permission, Moore grafted 10 scions on native rootstock and, on his own farm, produced several successive generations from the original tree, showing that it was a new variety.

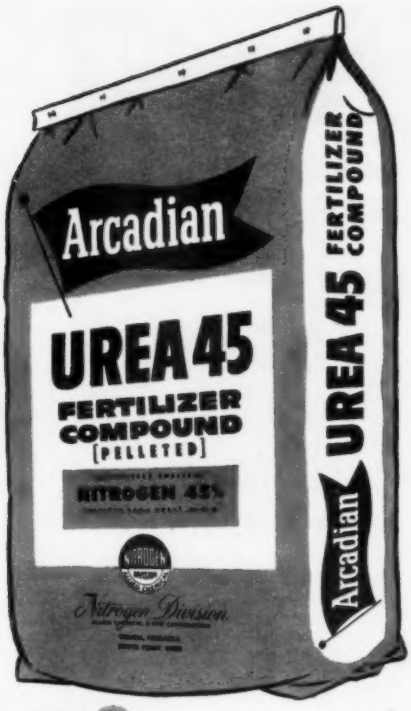
In 1953, Moore filed a patent application for the peach tree, naming himself as the "inventor."

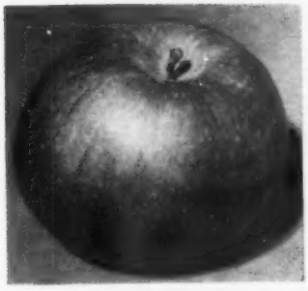
According to the patent law, only the original and first inventor or discoverer is entitled to a patent. The question arose of just what "discovers" means in this context.

The patent was recently issued to Moore as the true discoverer because he was the first to recognize the tree as a new variety and utilize the proper techniques to reproduce the plant. Miller was the first to take note of the seedling and to cultivate it; however, he "found" the tree, but he did not discover it.—*Sidney A. Diamond.*

Editor's Note: The tree patented by W. W. Moore is known as the Kimbo peach, which is similar to the Elberta, but differs from it in greater hardiness and resistance to cold. Fruit ripens about 10 days later than the Elberta, usually during first two weeks in September. The Kimbo patent has been licensed to Buntings Nurseries, Inc., Selbyville, Del., but it will probably be several years before the tree is commercially available in quantity.

Loaded WITH GROW POWER!





FOR FRUIT there's nothing like UREA 45 to make easy, efficient work of nitrogen application to produce big yields. You get 36 pounds of actual nitrogen in every 80-pound bag of ARCADIAN® UREA 45. And it's all high-quality urea nitrogen, quick-acting, long-lasting and leach-resistant. The firm, free-flowing pellets are easy to apply in any equipment. UREA 45 is ideal to add to irrigation water, so water can do the work of fertilizing. Any way you use it, ARCADIAN UREA 45 is a labor-saver and a profit-maker. Get ARCADIAN UREA 45 today.

SEE YOUR *FERTILIZER DEALER* **NOW....**

NITROGEN DIVISION New York 6, N. Y. • Hopewell, Va. • Ironton, O. Raleigh, N. C. • Indianapolis 20, Ind. • Omaha 7, Neb. • Kalamazoo, Mich. • St. Paul 4, Minn. Columbia, Mo. • Columbia 1, S. C. • Atlanta 3, Ga. • San Francisco 4, Cal. • Memphis 9, Tenn.

Allied Chemical

Grow with Arcadian UREA 45

One Man and One Tractor
can hoe
1000 trees a day!

with a TM-100
TREE MULCHER

Designed to fit the needs of any fruit grower, the HARROMATIC TM-100 with one or two circles around the trees clearly cultivates—mulches even the toughest grass sod thoroughly!

The 32" cutting head extends 5' from rear tractor wheel, permits mulching right up to the tree trunk.

with a TM-400
TREE MULCHER

The HARROMATIC TM-400 attaches easily and quickly to all tractors with 3-point or 2-point hydraulic lift.

32" or 42" cutting heads are available. Hinged head permits mulcher to follow contours . . . even works on banks or terraced orchards or groves. Folds for easy transport. Get the facts on how a HARROMATIC Tree Mulcher can save you work—time—and money!

MULCHER DEVELOPED FOR CITRUS TREES ALSO AVAILABLE

Send coupon to Dept. 1 for Details

Please send full information on the TM-100 and TM-400 HARROMATIC TREE MULCHERS.

Name_____

Address_____

Town_____ State_____

No. of acres of orchards_____

DEALER INQUIRIES INVITED

The HARROMATIC Corp.
Shippensburg, Pennsylvania

Pears

Loving Care

THE number of years required to bring a new pear orchard into production is the principal factor involved in the cost of establishing one.

Producing a tree large and strong enough to hold up a sizable crop as well as inducing it to form fruit buds and set fruit are the two problems involved. These two factors are opposed to each other. Vigorous growing trees get large but tend not to produce fruit buds. Non-vigorous trees set buds but are not large enough to hold up a crop.

The first step is to get a tree large enough to produce good crops in as few years as possible. In order to do this, the planting, watering, fertilizing, cultivating, and pruning should all be done with great care. Young trees need the constant, loving care of the owner to prosper.

Where trees are irrigated it is no problem to supply water to newly-set trees on light soils. In clay soils it is almost impossible to properly water. Overwatering, which results in root injury, is more common than underwatering.

When planting in heavy soil, haul in some light sandy loam, or prepare a mixture of half loam or clay loam and half sawdust, plus a coffee can measurement of bone meal per hole. Tests indicate the holes can be filled with pure sawdust plus bone meal in preference to clay.

Dig the hole 6 inches deeper than required; fill back the bottom 6 inches with loam, mixture, or sawdust; set the tree; fill the hole; settle with water. The young trees will then grow satisfactorily until the first hot days of early summer. Then make a basin around each tree and water every 10 days. Only enough water should be applied to wet the root zone. A small excess will drain into the 6-inch extra depth of hole.

The difficult time to keep a new tree growing is from late May till early July. At this time the root system is still short of water-absorbing rootlets in proportion to new top growth. This, together with the plant's natural desire to set terminal buds during the long summer days, makes it essential to provide the best of care at that time. If the young trees can be kept growing till early July, it is much easier to maintain growth until fall.

Clean cultivation, at least around the tree, is necessary. The young trees cannot successfully compete with weeds for water or nutrients. One or two medium-size weeds will slow tree growth and one large weed even 2 or 3 feet away will stop a young tree's growth at the first spell of hot weather. Eliminate all weeds within 3 feet of the tree and dwarf those farther away by mowing or disking.

Encouraging the production of long unbranched shoots is wasteful since it is necessary to prune severely the following winter. This can be avoided by proper summer pruning. The first pruning is done at planting time. Because severe cutting will help stimulate vigorous growth, the trees should be cut back to 20 to 24 inches when set. This will balance the loss of roots and top. When the new shoots are 24 inches long and still growing vigorously, select three of them and head them back to 18 inches. If there are other shoots of similar length competing for position, these should be severely headed back so the three selected branches can grow and spread normally.

By doing this, the young tree at the end of the first year should have a trunk 20 to 24 inches long, three main branches 18 inches long, and each of these with two or three secondary branches. Thus, by the end of the first year, you have the equivalent of a two-year-old tree.

The first dormant pruning should consist of heading back the six or eight secondary branches to 18 to 24 inches in order to promote further branching as well as to stiffen them and keep them from bending out of shape. Other shoots which are growing horizontal or hanging down should be left alone.

Shoots which are growing upward and might compete with the permanent framework branches should be severely cut back. These will grow next year and darken the center of the tree which will, in a way, encourage an upright growing tree to develop a better spread of branches. They will also serve to produce fruit early in the life of the tree.

During the second summer, the main framework shoots should again be headed back if they are growing with excessive vigor. From then on, only a minimum of pruning should be done. The heavier the pruning, the longer it will take to bring the tree into heavy production. A little trimming to keep the tree in balance and the removal of excess sprouts from the tree center is all that is required. —*C. B. Cordy, County Ext. Agent, Medford, Ore.*

FROST HAZARD

(*Continued from page* 11)

As a result of these and other observations the W. F. Allen Company planted only a portion of their peach acreage to rye in the fall of 1947. The balance of it was kept bare of grass and weeds so as to be hard and bare during bloom and shuck-off the following spring. Additionally, they set up some test areas in co-operation with Bill Aldrich and me just in case another frost might hit the area in 1948.

Fortunately for my story, but unfortunately for the Allens, the frost arrived almost on schedule, again three nights of it, on May 11, 12, and 13. Frost damage was similar to that in 1947, very severe where the ground was blanketed with a cover crop of rye, chickweed or freshly stirred soil; much less severe where the soil was hard and bare.

The Allens needed no more convincing. They have not grown a winter cover crop in their peach orchards since 1948. They now depend upon a summer cover of volunteer weeds and annual grasses to replenish the organic matter. This is mowed several times before harvest to keep it from competing too strongly with the trees, thereafter it is permitted to grow as it will until it matures or is killed by frost. It is then disked down progressively in late fall until the soil is essentially bare.

Surprisingly enough, this program is building up a higher level of organic matter in the soil than the former winter cover crop program, according to Lee Allen, who supervises orchard operations for the W. F. Allen Company.

Fall disking is supplemented by chemical control of weeds in the winter months, if necessary. Chickweed is the troublemaker. It tends to stage a comeback during warm periods in the winter months and it may blanket the soil under the trees by blossomtime if not controlled with chemical sprays. Needless to say, the Allens do not stir their soil in the spring until May 15. They have learned that it does not pay to do so on the Eastern Shore of Maryland.

Has this program paid dividends? The Allens think it has. They have not lost a crop from frost since they changed their cover crop practices in 1948. Admittedly, their crop has been thinned by frost from time to time, but they have always had enough left so it paid them to spray, except in areas where chickweed was permitted to blanket the soil.

(*Continued on page* 63)

Roper NURSERY & ORCHARD DIGGER

hole-a-minute tree planting — sitting down!

FULL YEAR GUARANTEE

POWER GEARS GUARANTEED 10 YEARS

16", 18" OR 24" AUGERS

SAFETY SHEAR PIN ABOVE GROUND

24 HOUR FACTORY SERVICE ON ALL PARTS

PATENTED BEARING AT DIG POINT FOR POSITIVE AUGER STRENGTH

SMALLER AUGERS AVAILABLE 6", 8", 10", 12" AND 14"

FREE RAIN GAUGE JUST FOR WRITING

FISHTAIL DIGGER POINT — FAST PENETRATION

Territories open for dealers in landscape and nursery products

Roper MANUFACTURING COMPANY 262 Elm Street ZANESVILLE, OHIO

ZON SCARECROW

Positive protection. Uses carbide or acetylene. No pilot. Retails $59.50. (Dealerships available)

B. M. LAWRENCE & CO.
244 California St., San Francisco

PRUNING LEARN TO DO IT CORRECTLY

Now, for the first time, the complete story of pruning compiled into one simple, easy-to-follow booklet. Shows how, when, where and why. Even the tools are illustrated and explained. Send 25c TODAY for your copy.

Bartlett Mfg. Co., 3044 E. Grand Blvd., Detroit 2, Mich.

This Respirator Protects Against 8 Toxic Sprays

THE M-S-A FARM SPRAY RESPIRATOR

Here's the *one* Respirator that makes outdoor spray programs safer. New type filters keep users on the safe side of toxic sprays. Replaceable with in-use M-S-A Farm Spray Respirators. Accepted by U. S. Government Interdepartmental Committee on Pest Control. Write for details.

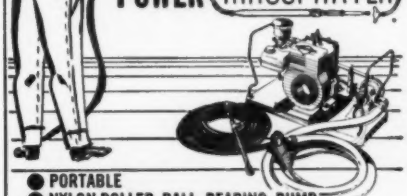
M-S-A GMC-1 INDUSTRIAL GAS MASK—For heavier mixing concentrations of all the above organic insecticides. "All-Vision" facepiece gives full facial protection—maximum vision.

DEALERS WANTED—Current customers are your best prospects. Cartridge and filter replacements mean repeat business. Write for details.

MSA
MINE SAFETY APPLIANCES CO.
201 North Braddock Avenue
Pittsburgh 8, Pa.

AMERICA'S MOST USEFUL POWER SPRAYER

NEW POWER AIROSPRAYER



- PORTABLE
- NYLON-ROLLER BALL BEARING PUMP
- SPRAYS DIRECT FROM CONTAINER
- YOUR BEST VALUE AT THE BEST PRICE

Save time and money with New Power Airosprayer. Its one-man portability lets you do a quicker spraying job. Ideal for trees, gardens, and cattle. Operates from ground, truck, or any solid base. Satisfaction guaranteed.

THE ORIGINAL AIROSPRAYER
Spraying made easy with an Airosprayer, still the finest slide sprayer on the market.

Attach This Order to Letter or Card with Name and Address

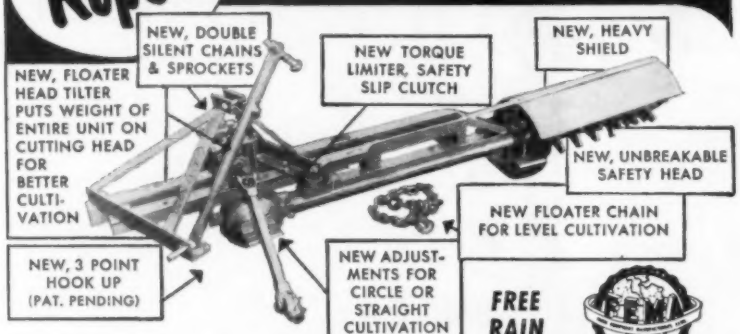
____Send me an Airosprayer ($8.40 east of Denver, $8.75 west, ppd. or C. O. D. plus charges).

____Send me Power Airosprayer ($133.95 complete with 1¾ h. p. Briggs & Stratton engine, F. O. B. Neodesha, Kansas).

____Send me additional information on Airosprayer____ Power Airosprayer____ and name of dealer.

AIROSPRAYER COMPANY
DEPT. A NEODESHA, KANSAS

ALL NEW Roper POWER TREE CULTIVATOR
FULLY GUARANTEED — FULLY ASSEMBLED


NEW, DOUBLE SILENT CHAINS & SPROCKETS
NEW TORQUE LIMITER, SAFETY SLIP CLUTCH
NEW, HEAVY SHIELD
NEW, FLOATER HEAD TILTER PUTS WEIGHT OF ENTIRE UNIT ON CUTTING HEAD FOR BETTER CULTIVATION
NEW, UNBREAKABLE SAFETY HEAD
NEW FLOATER CHAIN FOR LEVEL CULTIVATION
NEW, 3 POINT HOOK UP (PAT. PENDING)
NEW ADJUSTMENTS FOR CIRCLE OR STRAIGHT CULTIVATION

FREE RAIN GAUGE JUST FOR WRITING

SAVE DOLLARS BY TREE CULTIVATING!
BETTER GROWTH; LESS RODENT DAMAGE

Roper MANUFACTURING COMPANY
262 Elm Street
ZANESVILLE, OHIO

LOOSCO "BANG"
BIRD SCARERS
In World Wide Use for Protection of
✓ Corn
✓ Orchards ✓ Vineyards
✓ Small Fruit ✓ Field Crops
R. B. RUTHERFORD
Box 2371 Phone: Bedford 1394
Hiler Branch P.O. Buffalo 23, N.Y.

ESHELMAN TRACTORS LOW AS $99
RAKES • PLOWS • CULTIVATES • SAWS
DOZER • HARROWS • MAULS • MOWS • CUTS
SPRAYS • HOLES • TILLS • SNOW-PLOW

Eshelman Tractors, Tillers, Riding Rotary Mowers for Better Lawns and Gardens. Advertised in GOOD HOUSEKEEPING. Thousands of satisfied users. Write for Free Literature.
Dept. 337, ESHELMAN, Balto. 2, Md.
Illus. Model $499.00
Shipping Points: BALTIMORE 2, CHICAGO, LOS ANGELES

ATTENTION FRUIT GROWERS!
see the
KELLAM AUTOMATIC BASKET TURNER

Patented

- Turns 20 packages per min.
- Straight line operation
- Powered rollers
- Holds package square & firm
- Handles 1, ¾ and ½ bushels without adjustments

KELLAM CO., MANUFACTURERS
SUBSIDIARY OF BISCOE FOUNDRY & MACHINE CO.
BISCOE, N.C. Ph. 3221

LIGHT and EASY TO CARRY
Put it where you need it!

STANDARD LITEWATE sectional roller conveyors are ideal for "spot" loading and unloading jobs — can be quickly, easily moved wherever desired. They handle all types of commodities up to 80 lbs. and operate at grades as little as ¼ in. to ⅜ in. per ft. Available in 10-ft. and 5-ft. straight sections and 90° and 45° curves; with interchangeable spacing of rollers on 1½ in. through 12 in. centers. Write Dept. S-3, for Bulletin 63-B.

STANDARD CONVEYOR COMPANY
General Offices: North St. Paul 9, Minn.
Sales and Service in Principal Cities

Standard GRAVITY & POWER CONVEYORS

NEW FOR YOU

Windstorm Insurance

I ran across a revolutionary device to protect trees and save fruit crops. It's called the Simplex Guying Assembly. First, a mast is erected near the tree. On the top of the mast is a patented cap of strong steel equipped with hooks from which wires extend to the limbs to be supported. It withstands even the most severe windstorms and it might be a good idea for you to write L. P. Caldwell, 821 N. Fuller St., Independence, Mo., for further details. I know he would be glad to tell you more about it.

Pay As You Use

The above photograph shows the largest trailer load of polyethelene carrot and citrus bags ever trucked from New York to Texas—enough bags to pack 1½ million pounds of oranges and 5 million pounds of carrots. All these bags were made from Visqueen "Q" Film, and sold by Roto-Lith, Ltd. Roto-Lith has developed a "Pay as You Use Plan" for grower-shippers. This plan allows small packers to buy in large quantities, thus

- **Tree Protection**
- **Electric Pruner**

enabling them to compete with large shippers as to the cost of the bags. The beauty of the plan is that payment can be broken down into 20 weekly installments. For more information on this plan, write to Bud Cooper, Roto-Lith, Ltd., 30 W. 13th St., New York 11, N. Y.

Orchard-Tested Ladder

Out on the West Coast, a new orchard ladder is being used which was tested for nine years in commercial orchards. Growers who are using the aluminum knockdown ladder report that over the years they have had no breakage, that the ladders have proven to be quite a bit cheaper than wooden ladders over a five-year period. The new ladder has three safety features which appealed to me: A hillside third telescoping leg; wide, flat, serrated steps for wet weather; and a wide base. Every type of orchard ladder is available, and I hope you will write Joe Schneider, Joe's Ladder Co., Inc., 13636 E. Foxley Dr., Whittier, Calif.

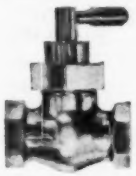
Be sure to mention AMERICAN FRUIT GROWER when writing to manufacturers.

It's Electric

At the New York State Horticultural Society Show, I and many of the growers there were excited about a new electric pruner. The new machine is easy to handle and cuts cleanly up to 1¾ inches in a twinkling of an eye. The machine weighs only 6½ pounds, and will cut in any position. Generators are available to provide current for two pruners. You'll want to know more about this new, important orchard tool. Write Homelite, Port Chester, N. Y.

Follow the advice of EXPERIENCED horticultural experts

Spray easily — Spray thoroughly. Spray and drive your tractor—Save money with **HAMILTON SWIVEL GUNS**



HAMILTON QUICK ACTION SHUTOFF VALVE

One quarter turn of handle gives full flow. INEXPENSIVE. Available in ⅜, ½ and ¾".

W. L. HAMILTON & CO.
BANGOR, MICH.

HYDRO-COOLERS

Manufactured by pioneers in peach hydro-cooling in use since 1950.

Lowest price—highest output—lowest operating cost. Mechanical Refrigeration or Ice Cooled.

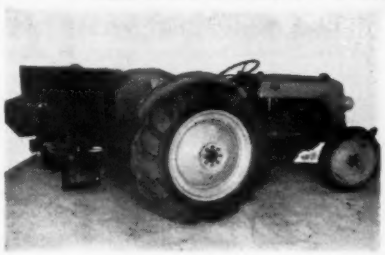
- **No side tanks below floor level**
- **Completely insulated**
- **Rust proofed** • **Uses block ice**
- **Capacity up to 600 bu. hour**
- **Automatic overflow**

WRITE FOR BULLETIN 210

Installed anywhere by us
WIRE—WRITE—PHONE

CLARKSVILLE MACHINE WORKS
CLARKSVILLE, ARK.
1706 W. Cherry Pleasant 4-2022

MR. GROWER: Sow Your Cover Crop, Fertilizers, Insecticides, in Hours Instead of Days.



"The Spreader with the controllable spread". Designed especially for the berry and grape growers and the orchardists and open fields. Control width of spread from 2 ft. to 40 ft. Direct spread where you want it. Side dress, band applicate, broadcasts seeds and cover crop. Why be limited to one type of spread?

Used by State and National Agricultural Departments for application of granular insecticides

Write for free folder

SKIBBE SEED & FERTILIZER SPREADER, SODUS, MICH.

AUTOMATIC ROTARY HOE
Automatically Hoes around Anything it Touches

WITH THE FRIDAY HOE you can cultivate an acre in an hour. Designed for Blueberries, Grapes, Currants, Gooseberries and other brambles. The hoe is trailer mounted, driven by 8.2 HP Wisconsin engine. A Vicker's hydraulic pump and mechanism pull the rotating cultivating head in and out of the row.

Can be pulled easily by any tractor as hoe is self-powered. This is the answer to your hoeing problem.

Also available in power take-off model

Write for descriptive folder.

FRIDAY TRACTOR CO.
HARTFORD, MICHIGAN

America's Finest Cultivator — at anywhere near its small price!

Hummin'bird ROTO-HOE

Now you can no longer afford to do hard spade and hoe work. This powerful (2½ h.p.) self-propelled tiller-cultivator makes gardening a pleasure. Tills up to 7" deep, cultivates thoroughly between narrow rows easily and quickly; the power does the work—you simply guide it!

$109.50 complete

Now in full production after 3 years of limited production and testing by many customers nationwide. At this low, low price there's no family with a garden who can afford to be without it!

INSTANTLY INTERCHANGEABLE ATTACHMENTS

In just seconds, the new PRESS-MATIC method of attaching lets you take off the cultivator and substitute either the beautiful 22" self-propelled twin spindle rotary mower ($44.50) or the Safe-Speed Edger ($27.50) attachments. They're integrally designed, unequalled at many dollars more.

WRITE TODAY for free color folder and nearby dealer's name. Write to ROTO-HOE, Dept. A-53, NEWBURY, OHIO. Do it now!

High-Pressure SPRAY HOSE

Special value—shipped immediately

800 Lbs. Working Pressure

Horticultural hose is new, first-grade, flexible. Resists oils, chemicals, insecticides, any D.D.T. spray. Couplings attached to fit all High-Pressure Sprayers. Shipped C.O.D., plus freight—or postpaid, if payment sent with order. Satisfaction guaranteed — or your money refunded.

CHOICE OF LENGTHS	INSIDE DIAMETERS ⅜"	½"	¾"
25 ft.	$10.25	$11.75	$16.25
50 ft.	19.00	21.75	30.00
75 ft.	27.75	31.75	43.75
100 ft.	36.50	41.75	57.50

Agricultural Rubber Products Corp.
269 Washington St., New York, N. Y.

PROTECT YOUR CROPS

SPRAY Low-Cost Magic Circle Repellent. Creates barricade against Deer Also Beavers, Woodchucks, Sheep, Skunks and Raccoons in some cases. Odor not offensive to humans.

BUY NOW! Locally, or order direct from State College Laboratories, State College, Pa.

New Rabbit Repellent Available. Write for info.

PRODUCT OF STATE COLLEGE LABORATORIES • P.O.Box 492, State College, Pa.

• PRUNING TOOLS
• GRAFTING SUPPLIES
• TREE COMPOUNDS

Write for 80 Page Catalog

A. M. LEONARD & SON, INC. Piqua, Ohio

Apples

New Varieties

GROWER interest in new apple varieties is high. The interest is due to 1) availability of numerous new color sports of standard varieties and older color sports; 2) overproduction of certain varieties in some areas; 3) more specific uses of processing types; and 4) current availability of several promising new varieties, other than color sports, which appear to have commercial adaptability and which fill specific needs.

New Color Sports—Wherever Delicious is grown, interest in several new color sports of Starking, Richared, and Delicious is mounting. The common factor of all of the new sports of Starking and Richared is that they develop color earlier than the varieties from which they mutated. This factor is important in areas which have difficulty in getting good color at optimum picking maturity. By the same token, however, the danger of picking too early, before the fruit has reached its best eating and storage quality, should also be recognized.

Some of the more promising early coloring sports of Starking are **Hi-Red, Hi Early, Red King, Red Prince, Starkrimson,** and **Redspur.** The latter two are of the so-called "spur type" and in addition to coloring early are reported from the Northwest as having developed a prolific lateral spur fruiting habit which makes for greater productivity and also smaller tree size—about ⅔ to ¾ the size of regular Delicious, which facilitates orchard operations and permits closer spacing in the orchard.

Royal Red, an early coloring sport of Richared, and **Vance Delicious,** an early coloring and somewhat early maturing, solid blush type sport of Delicious, are highly recommended. At Geneva, N. Y., Vance has consistently reached picking maturity about a week before Starking and in some seasons the spread is even greater.

It is suggested that growers make only trial plantings of any new color sport until its performance under any set of conditions is known.

New Varieties—Several promising newer varieties which have developed mostly from controlled breeding programs are rapidly assuming commercial importance.

Lodi (Montgomery x Yellow Transparent), introduced in 1924 as a possible successor to Yellow Transparent, is now attaining a position as one of the leading early varieties. While it is a few days later than Yellow Transparent, it is of larger size and firmer flesh. This permits distant shipping. Inherently, Lodi had a strong biennial bearing tendency but with the advent of blossom thinning sprays this is no longer a problem. Eastern growers are now rating Lodi as one of their most profitable varieties.

—Photo by Elon Gilbert, Wenatchee, Wash.

REDSPUR has heavy lateral fruit spurs, a typical characteristic of the new spur-type Delicious.

Wellington (Cortland x Crimson Beauty). An excellent, attractive, red-striped early variety, to follow Lodi in season. While Wellington is very new, it shows real promise as a commercial variety. Its large size, annual production, evenness of ripening, good sauce and dessert qualities are unusual for an early variety.

Monroe (Jonathan x Rome Beauty). Introduced in 1949 as a possible successor to Baldwin, Monroe has been heavily planted in western New York. A recent survey shows that in Wayne County, New York, alone nearly 14,000 trees have been planted. It is a heavy annual cropper of good sized, uniformly shaped, nearly solid red fruit of good quality for both dessert and processing. Monroe is subject to powdery mildew. However, mildew is easily controlled in a bearing orchard if sulfur is used for scab control up until about petal fall.

Idared (Wagener x Jonathan). An excellent late-keeping variety from the Idaho Experiment Station. Idared is performing well throughout the Northeast and should soon be in commercial production. Its

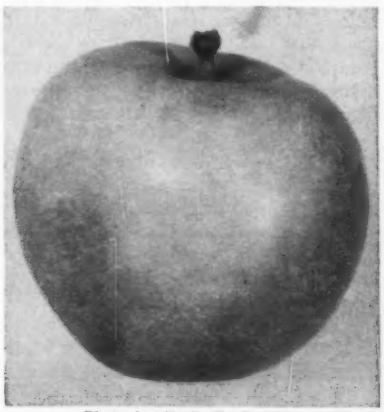
fine appearance, good keeping and dessert qualities are attributes which will make it valuable as a late fresh market variety.

Spartan (McIntosh x Yellow Newtown). This is a McIntosh type with somewhat firmer flesh and higher quality. It is usually picked about a week after McIntosh and will store somewhat longer than McIntosh. Spartan requires good growing conditions and thinning in order to attain adequate size. Where a McIntosh type is wanted to follow McIntosh in season, it would seem that Spartan is worthy of trial.

Other newer varieties which are worthy of trial plantings are **Red Warrior,** an attractive early, firm fleshed but only fair quality variety ripening just after Early McIntosh. **Puritan** (McIntosh x Red Astrachan) from Massachusetts ripens with Early McIntosh and is an attractive good quality variety which seems to attain a better average size than early Mac. **Jonadel** (Jonathan x Delicious) from the Iowa Station is a late-keeping general purpose type which may have value as a substitute for Jonathan as it apparently is not subject to the physiological disorders of Jonathan and attains a better size.

Melrose (Jonathan x Delicious) from the Ohio station has performed well at Geneva. It is a late-keeping variety of good dessert quality which usually, but not always, develops good color under our conditions. May be of value where Jonathan grows well.

Franklin (McIntosh x Delicious) is a good quality dessert type which is picked just after McIntosh. May be of value for local markets as it bruises too easily for distant shipping. **Webster** (Ben Davis x Jonathan) x (Ben Davis x Jonathan) is a very large red striped productive variety good for processing.—*L. G. Klein, New York Agr'l Exp. Sta., Geneva.*



—Photo by Paris Trail, Geneva, N. Y.

LODI, of Yellow Transparent parentage, ranks today as one of the leading early varieties.

50,000 PEACH TREES

Offered in assorted sizes, following varieties:

Ambergem	Golden Jubilee	Red Globe
Belle of Georgia	Halehaven	Redhaven
Blake	J. H. Hale	Redskin
Brackett	Indian	Rio Oso Gem
Cardinal	Keystone	Shipper's Red
Coronet	Krummel	Slappey
Dixigem	Late Elberta	South Haven
Dixired	Mayflower	Summercrest
Elberta	Ranger	Triogem
Erly Red Fre	Red Cap	

Send us your want list for special quantity prices.

WAYNESBORO NURSERIES
Waynesboro, Virginia

Be Sure With
GREENING'S TREES

- BUD SELECTION
- ALL ORDERS GUARANTEED
- PROVED and PROFITABLE VARIETIES

The Greening Nursery Company, one of the leaders in bud selection, have for over 100 years given all growers the benefits of their research and improved strains which mean greater orchard profits.

AGENTS
Earn extra money, full or part time. It's pleasant and profitable to sell Greening nursery stock. Write us today for all of the details.

Send 10c to cover postage for the Greening 40-page color catalog.

GREENING'S BIG NURSERIES — TREES YOU CAN TRUST — MONROE MICHIGAN

THE GREENING NURSERY CO.
P. O. BOX 605 MONROE, MICHIGAN

FRUIT & NUT TREES — QUALITY NURSERY STOCK — Berry Plants & Dwarf Trees — ORNAMENTAL TREES & SHRUBS — SEND FOR FREE CATALOG
TUALATIN VALLEY NURSERIES — SHERWOOD OREGON

PEACH APPLE **TREES** LOW AS 20c
Cherries, Pears, Plums, Nut Trees, Strawberries, Blueberries, Dwarf Fruit Trees, Grapevines 10c, Shrubs, Evergreens, Shade Trees, Roses 25c up. Quality stock can't be sold lower. Write for FREE color catalog and $2.00 FREE bonus information.
TENNESSEE NURSERY CO., BOX 4, CLEVELAND, TENNESSEE

T. B. West & Son
MAPLE BEND NURSERY
FRUIT TREES — ORNAMENTAL
SMALL FRUIT PLANTS — TREES AND SHRUBS
Also Dwarfs in the Popular Varieties
PERRY, OHIO

STRAWBERRIES
Allen's 1958 Berry Book tells best varieties for home and market, and how to grow them. *Free copy. Write today.*
W. F. ALLEN COMPANY
105 Evergreen Ave., Salisbury, Maryland

SEEDLESS WATERMELON SEEDS
Developed abroad (U. S. Tested)
Excellent Yield
GROWERS AND DISTRIBUTORS WANTED
Send $5.00 to cover 75 seeds and handling
INTERCONTINENTAL INDUSTRIES, INC.
State 2-9364 555 W. Adams St.
Dept. F CHICAGO 6, ILL.

FREE Neosho Nurseries Catalog

AGENTS WANTED — Earn money for full or part time work. Ask for particulars.

Better Fruit Trees for 40 Years!
Leading varieties of **APPLE, PEACH, CHERRY, PLUM, GRAPE.** Guaranteed hardy, disease resistant. **Free Catalog.** 48 pages of money-saving offers, fruits, roses, shade trees, ornamentals, etc.—shown in natural color. Write today.

NEOSHO NURSERIES CO. DEPT. 385 NEOSHO, MO.

State REPORTS
WESTERN EDITION

Pollination in Washington

POLLINATION requirements of fruit trees in the state of Washington are now fairly well understood by fruit growers, although some rather glaring examples of inadequate pollination have been noted in years past.

Pollination is simply the transfer of pollen from the anthers to the stigma of a flower. When this occurs on one variety it is called self-pollination. When it occurs between two varieties, it is called cross-pollination. Delicious and the various strains of Delicious are self-unfruitful, as is the case with Winesap and its various strains. However, the Delicious is an excellent pollinator for the Winesap, but the reverse is not true, and a third variety is necessary in order to provide good cross-pollination with Delicious and its strains.

One of the more self-fruitful varieties of apples is Golden Delicious and, under favorable locations, this variety sets good crops of fruit when it is planted by itself in a separate block. Golden Delicious is also suitable for cross-pollination with practically all other apple varieties.

It is necessary to carefully consider pollination requirements of a given variety of apples or of other tree fruits and provide it with a variety of fruit which will supply good pollen at the right time suitable for cross-pollination. In the past, it has not been uncommon to use Jonathan as the pollinator for Delicious and Winesap. But since the market for Jonathan has fallen off, other more suitable varieties have been in demand, such as Red Rome, Black Jon or Red Jon, McIntosh and others.

Not only must the fruit trees bloom at the same time in order to share and intermingle their pollen, but the pollen source must not be too far distant. A maximum distance for a pollinator to be placed in the orchard should be at every third tree in every third row. However, it is more convenient to have solid rows of pollinators and solid rows of other varieties.

When a grower is unable to decide just which varieties will be the most profitable 10 years hence when the orchard is in good production he may plant several varieties as follows:

On a 20 by 20-foot plan, he may plant, on each corner of the 20 foot square, one of these varieties—Winesap, a red strain of Delicious, a Golden Delicious, and a Jonathan sport.

As the trees come into bearing, pollination and cross-pollination is no problem. When trees are about 10 years of age, he must decide which are the fillers to be removed.

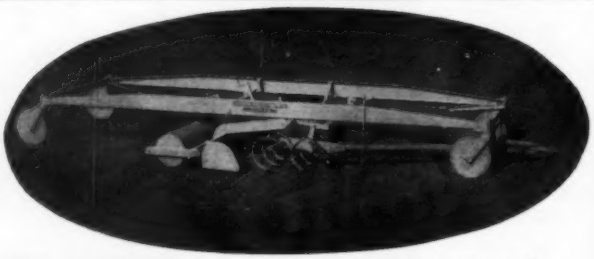
In a few more years, he must again decide which are the semi-permanent trees. These must be on their way toward removal by eliminating large scaffold limbs, leaving the lightly-pruned permanent trees to occupy the major amount of space.

When a grower removes his 10-year-old filler trees, he may choose to place grafts rather high up on the south side of the permanent trees. The variety of graft which he selects and places in his tree will be one that will provide suitable cross-pollination. For instance, if he wishes to make his permanent plant a Winesap planting, he may choose to put in Golden Delicious, and have one single fair-sized branch of Golden Delicious in the upper part on the south side of the permanent tree. By the time he removes his semi-permanents, the grafted-in branches are blooming nicely.

Since Golden Delicious are rather tender skinned and easily russeted by early spring sprays, the quality of this variety in a mixed planting may not be the best. For this reason Golden Delicious could be planted in separate blocks where they can be given special care with mild spray materials, or spray materials can be eliminated at early part of growing season.

On the other hand, the red strains of Delicious require good cross-pollination and a mixed planting is nec-

MARVIN LANDPLANES



MARVIN MULTI-PURPOSE LANDPLANE ®

LANDPLANE *for greater orchard profit!*

Now keep your orchard *smooth and level* with the Marvin Multi-Purpose LANDPLANE for *easier, more effective irrigation* and *higher quality crops!* Saves up to 50% on irrigation labor costs. The spring tooth bar *breaks up ground* before leveling, then the bucket *packs it just right* as it levels. Also prepares ground for *mechanical nut harvesting.* Easy to make 180° turns within 24 ft. tree rows. Write today.

SOIL REMOVED FROM HERE ← SOIL DEPOSITED HERE →

MARVIN LANDPLANE COMPANY
P. O. BOX 209A, WOODLAND, CALIFORNIA, U.S.A.

essary. Red strains of Rome are suitable, as well as red strains of Jonathan or separate rows of Golden Delicious with separate rows of the red strains of Delicious in the planting.

Some growers, in order to take care of early fruitfulness in the orchard, will plant Golden Delicious as fillers and semi-permanent trees, with the red strain of Delicious as permanent trees. This plan calls for an occasional pollinator tree planted in the permanent position on the 40 by 40-foot plan or, even better, a solid row of permanent pollinators of suitable variety interplanted with the red strains of Delicious.

Hand-pollination of self-unfruitful trees, that do not have pollinators in bloom nearby, is practical in an emergency. However, it is expensive.

Among the commercially grown pears, Bartlett and D'Anjou are suitable for cross-pollination purposes. With Bing cherry growers, the Canadian variety Van is a good cross-pollinator, providing cherries almost identical to Bing with the exception of a shorter stem. Most peach trees in commercial orchards are self-fruitful, even in solid blocks with few commercial exceptions. The J. H. Hale is a notoriously self-unfruitful variety. Nectarines and apricots for the most part are all self-fruitful varieties.—*Archie Van Doren, Tree Fruit Expt. Station, Wenatchee.*

Promising Varieties

THREE pear varieties appear promising for commercial market trial in Oregon, reports Henry Hartman, horticulturist, Oregon State College. The varieties have been under test at Southern Oregon branch experiment station, Medford.

Recommended for their high quality and ability to withstand mechanical injury are:

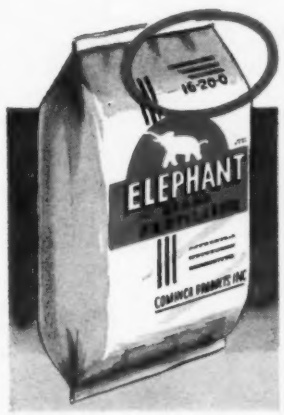
Nye Russet Bartlett, a bud sport and best russet strain of Bartlett. Flavor is more spicy and fruit is firmer when ripe. Keeps longer than Bartlett. Russeting is smooth, with deep yellow color.

Golden Doyenne, bud sport of White Doyenne. Fruit is higher in dessert quality, russet is smooth with deep gold color. Shelf life is long; keeps a month or six weeks longer than Bosc.

Grand Champion, new russet sport of Gorham. It is equal to Comice in dessert quality, but superior in remaining free of blemishes. Russeting is smooth, with deep gold color. Remains in good condition at least through Christmas holidays.

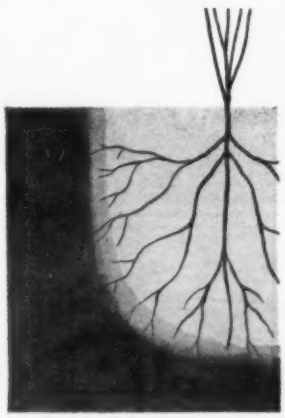
The experiment station has no trees of these new varieties for distribution now. THE END.

look for these signs
of fertilizer value!



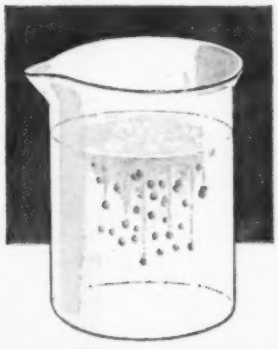
HIGH ANALYSIS

means economy in time and labor — more plant food in every bag! Better value for your fertilizer dollar



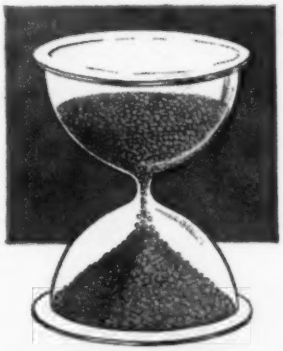
HIGH AVAILABILITY

plant food in a form that can be readily taken up and used by the growing plant.



HIGH WATER SOLUBILITY

plant food content dissolves readily in water so that rain and soil moisture can carry it to the plant root zone



FREE FLOWING

uniform-sized pellets ideal for standard application equipment . . . makes fertilizer application accurate, fast and easy

You'll find all four in

Elephant Brand

high analysis **FERTILIZERS**

11-48-0	13-39-0	16-20-0	23-23-0	24-20-0
27-14-0	6-24-24	8-32-16	10-32-10	12-12-12

Nitraprills (Ammonium Nitrate) Ammonium Sulphate
Triple Super Phosphate

87180 M W 4

Exclusive U.S. Sales agent for Elephant Brand Fertilizer: Balfour, Guthrie & Co. Limited
San Francisco • Los Angeles • Seattle • Portland • Spokane • Minneapolis

GET MORE FROM YOUR LAND WITH ELEPHANT BRAND

THE NEW SPRAYMISER
An All Purpose Spray Gun

Up to 10 gals. per minute at 600 lbs. pressure

Send for complete information
SPRAYER SUPPLY MFG. CO.
225 Front Ave. N.W., Grand Rapids 4, Mich.

GRAFTWAX TREE HEALANT

Since 1929 excels in grafting; cures tree and plant wounds, blights, used for cavities. Repels rodents. Adhesive, waterproof. IT SEALS AND HEALS. APPLY COLD. Put up in 1 lb. cans. $1.05 per lb., $2. per 2 lbs. $6. per 6 lbs., postpaid. W. of Mississippi R. add 15c per lb. Pa. orders add tax—Free Sample

CLARION DEVELOPMENT CO. Dept. A, Clarion, Pa.

If it's for an orchard large or small we have it. We would like to send you our latest free catalogue!

Write to!
Tyson Orchard Service
A complete line of orchard tools, equipment and chemicals.
Flora Dale, Biglerville, Pa.

CUCKOO CLOCK

from GERMAN BLACK FOREST

Now only $3.95
postpaid . . . duty-free
Shipped Direct To You from EUROPE

This low price possible only through our unique direct import plan. Genuine German CUCKOO CLOCK with weight and pendulum movement. Excellent timekeeper. Cuckoos cheerily every quarter hour in clear, pleasing voice. HAND CARVED in traditional design by famous Black Forest wood carvers. Antique walnut finish. Perfect for den, bedroom, alcove, child's room or kitchen. Shipped direct from Free Europe in export packing with strange foreign stamps. Order as gifts, too, each shipped direct. (Not more than one addressed to the same person.) Send only $3.95 for each. No C.O.D.'s. Satisfaction-or-money-back guarantee.

ED LURIE, Dept. 2C
67 Warren St., Roxbury, Massachusetts

When writing advertisers be sure to mention AMERICAN FRUIT GROWER.

Unique 3 point mount arrangement, heavy duty steel tank with 100 gal. capacity and mechanical agitator now makes it possible to do a complete orchard spray job in the smaller orchards, and unnecessary to bring out the big machines for those small jobs in the larger orchards. With the addition of a Wanner Pump, putting out up to 12 gals. per minute and 500 lbs. pressure, you are ready for any spray job in the orchard or field.

PAK-TANK only $125.00
PAK-TANK complete with Wanner Hi-Pressure pump $295.00
PAK-TANK with Pump and Row crop boom $365.00
Wanner Piston Pump only—12 gal. per minute capacity 500 p.s.i. $125.00

Rear's also manufacture Trailer Model Pull-Tank with all the above features—200 and 300 gal. capacity.

REAR'S FARM SERVICE
755 River Avenue Eugene, Oregon

APPLES WITH CHARACTER

(*Continued from page* 14)

too many over-sized, under-flavored, and off-condition apples.

"Chain stores loaded up on the supposed 'bargain,' and the American housewife was misled by advertising which shouted that apples were particularly good, and were available at very reasonable prices. Now the housewife who knows anything at all about fruit is well sold on the idea that apples are no good and she has turned to other fruits that are.

"National advertising will be a fine sales aid in the apple industry, when we make sure the product is worth advertising," emphasizes Miller.

Miller cites Dr. Fred Motz's article, "Summary of the 1956-57 Deciduous Export Season," and states: "When the chips were all down in England and certain other foreign markets last season, American shippers, with a few exceptions, had lost the game due to irregular packs too often delivered in poor condition."

In touring the country, Miller says he has seen thousands of crates of apples racked up like stove wood in orchards and sheds and left for days and sometimes weeks, waiting their turn to be packed and stored for eventual shipment to the fresh markets. This is bound to result in a poor-quality consumer product and consequently lower consumption.

Miller calls for a meeting of the best minds in the industry to devote their energies and intellects to devising practical plans to meet the industry emergency.

He doesn't think we are overplanted in this country. Many more trees can be profitably employed if and when we become smart enough to introduce real *condition-control.*

A trip to Consolidated orchard's cold storage and packing house at Paw Paw, and a visit with Miller, will convince anyone that he and his staff have solved the problem of condition-control.

Consolidated's cold storage and packing plant are valued at half a million dollars.

The storage is designed to carry under refrigeration 175,000 lug boxes of apples to be packed out fresh on order. Miller plans to build a more than 100,000-bushel addition to this storage in the near future, which will enable him to store approximately 600 carloads (500 bushels per car) of apples in his total refrigerated storage space.

The packing room, built in 1939, was designed for year-round operation, and is equipped with automatic oil heat for winter and good ventilation for summer.

It's here that Consolidated's famous extra fancy Mountaineer® Brand apples are packed.

At Paw Paw, fruit is packed to each buyer's specifications in baskets, boxes, or consumer units. The packing room and equipment, much of which was designed by Miller's own men, will handle up to 400,000 bushels annually, including summer and early fall apples that are moved straight through without refrigeration.

The nine- to ten-month packing season generally extends from early July to March or April. All orders are packed fresh the day shipped, thus protecting buyers from difficulties with decay, scald, and other troubles normally found in fruit packed at harvest time and held in storage for long periods.

Consolidated's fruit-planted acreage is 1500, with 46,405 apple trees, 5000 peach trees, and 1000 cherry trees, mostly sweet. (Over half of the apple trees are yet to come into full production.) Eventually Miller plans to get his apple production up to 500,000 bushels.

The orchards thrive in Allegheny County, Maryland, and Morgan and Hampshire counties, West Virginia.

Approximately half of the 300,000 bushels of apples grown and packed are for export. They are trucked into New York in large trailers and shipped to England, Holland, South America, and other Latin American countries on ocean freighters.

Consolidated's domestic markets reach as far as Chicago and Omaha in the Midwest, and from eastern Canada to southern Florida. Many summer apples are shipped to Canada.

Principal varieties grown are Red Delicious, Red Rome (highly popular in South America and Holland), Stayman, York, Golden Delicious, and summer apples such as Lodi and Transparent.

Consolidated has control techniques of disease and insects down to a science. Members of the spraying staff, headed by specialist Albert Simmons, use Bean speed sprayers pulled by D-2 caterpillars. According to Simmons, mildew is the biggest problem.

"We have beaten early-season scab with a combination of Crag Glyodin and mercury," says Miller. "By applying this compatible combination, we get highest quality fruit at a considerable saving in cost over other organic sprays. Mercury is, of

course, added only when long rainy periods delay applications."

Miller explains that they use Karathane for mildew control, mixed with Glyodin, which, because of its excellent spreading-sticking action, helps Karathane do a better control job.

Miller's efficient management extends into the area of company and employee relations. During the rush seasons of picking and packing, no migratory labor is employed—only local people.

For the entire permanent staff of Consolidated, there is a profit-sharing plan, established in 1939, that gives these employees a real stake in the success of the business. When the company gains—and it does consistently—workers are paid a bonus based on a percentage of their total salary earnings.

Last year, Consolidated paid a 6% bonus—a total of $9331.55—to its permanent employees, which in effect was a 6% retroactive raise for the entire year.

Key personnel on Miller's orchard staff are Miller's brother, Gilbert Miller, Maryland division manager; Harvey Weller, secretary; H. D. Beeler, Jr., sales manager; Maxine Mahood, assistant sales manager; C. L. "Skip" Gordon, packing superintendent; and Vernon Hoover, cold storage superintendent. THE END.

FROST HAZARD

(*Continued from page* 55)

Lee Allen is convinced that chicken manure contributed to their frost troubles. So am I. It also added to their brown rot troubles. The Eastern Shore was then, and is now, the broiler center of the nation. Chicken manure was available for the asking and there was nothing better than chicken manure to get rye off to a fast start and keep it growing. Very shortly peach growers on the Shore were growing bigger and bigger crops of rye and fewer and fewer peaches.

I am not suggesting by implication that all peach growers shift from a winter cover program to a summer cover. If your present practices are producing satisfactory results, by all means stick with them. However, if you are having more than the usual amount of trouble with spring frosts and brown rot, it might pay you to change your cover crop practices as the Allens have done. Lee Allen tells me that their new program is easier, simpler, and cheaper to carry out than their old program and for that reason alone, if for no other, he would not consider going back to a winter cover crop program. THE END.

DO YOU NEED FRUIT TREES?

We offer the following varieties No. 1 Quality in sizes indicated by "X"

	2-3′ caliper 1/4-3/8″	3-4′ 3/8-1/2″	4-6′ 1/2-5/8″	5-7′ 5/8″-up
APPLE				
Beacon	.....	.....	X	.....
Blackjon	X	X	X	X
Blackmack	X	X	.....	.....
Early McIntosh	X	X	X	X
Haralson	.....	.....	X	.....
Imp. Blaxtayman #201	X	X	X	X
Imp. Secando Winesap	X	X	X	X
McIntosh	.....	.....	X	X
Nero Red Rome	X	X	.....	.....
Royal Red Delicious	X	X	X	.....
Red Delicious Stark Strain	X	X	X	X
Shotwell Delicious	X	X	X	X
Yellow Delicious	X	X	X	X
PEAR				
Anjou	X	.....	.....	.....
Bartlett	X	.....	.....	.....
Comice	X	.....	.....	.....
Max Red Bartlett	X	.....	.....	.....
CHERRY				
Bing (on Mazzard Root)	X	X	.....	.....
Bing (on Mahaleb Root)	X	X	X	X
Lambert (on Mazzard Root)	X	X	X	X
Lambert (on Mahaleb Root)	X	X	.....	.....
Royal Ann	X	.....	.....	.....
Van	X	X	X	X
Montmorency	X	.....	.....	.....
APRICOT				
Blenheim	X	X	X	X
Chinese	X	X	X	X
Perfection	X	X	X	X
Riland	X	X	X	X
Sun-Glo	X	X	X	X
Tilton	X	X	X	X
Wenatchee	X	X	X	X
PEACH				
Dixired	X	X	X	X
Early Improved Elberta	X	X	X	.....
Elberta	X	X	X	X
Herb Hale	X	X	X	X
J. H. Hale	X	.....	X	X
Redglobe	X	X	X	X
Redhaven	X	X	X	.....
Rochester	X	X	.....	.....
Rio Oso Gem	X	.....	.....	.....
Sunhigh	X	X	X	X
PRUNE				
XX French	X	X	X	.....
Early Italian (Richards)	X	.....	X	X
Italian Pr H-1 (Myro root)	X	X	X	X
Italian Pr H-1 (Peach root)	X	X	X	X
Stanley	X	X	X	X

ALSO Limited Supplies other varieties . . . Send for free 32-page natural color catalog Today! Commercial Growers ask for Special Commercial Prices.

Columbia & Okanogan Nursery

P.O. Box 116 **Wenatchee, Washington**

DEPENDABLE FRUIT AND NUT TREES, SMALL FRUITS, ORNAMENTALS, and GENERAL NURSERY STOCK. WRITE FOR FREE CATALOG.

CUMBERLAND VALLEY NURSERIES, Inc.
Dept. 101 McMinnville, Tenn.

Certified Cultivated Blueberry
10 Bearing Age Plants • $4.50
EARLY—MID SEASON—LATE
Send for Literature and Price List
PLANTS: WHOLESALE AND RETAIL
17 VARIETIES
MONROE FARMS
BOX 426 BROWNS MILLS, N.J.

FRUIT TREES, STRAWBERRY, RASPBERRY AND BLUEBERRY PLANTS

Dwarf apple trees on Malling 1, 2, 7, 9 stock. Nut and Shade Trees, Grape Vines, Flowering Shrubs, Evergreens. Over 80 years experience growing and supplying complete line of nursery stock direct to planters. Satisfaction assured—prices reasonable. 60-page illustrated catalog and planting guide sent free—Write
BOUNTIFUL RIDGE NURSERIES
Box F-38, Princess Anne, Maryland

You'll Get Better Growth With Mayo's
BETTER PEACH TREES
Manure-grown—heavy roots, hardier stock. Every tree calipering 9/16" to 1".
Golden Jubilee, Hale Haven, Red Haven, Elberta
$90.00 per 100
Rush Your Order Today—Spring Delivery
MAYO BROS. NURSERIES, Dept. AF, Fairport, N. Y.
Satisfaction Guaranteed. Price List on Request.

ALBRU PEACH
(Plant patent 813)
FRENCH'S OWN NEW INTRODUCTION

Albru is a sport of J. H. Hale, a large highly colored freestone, ripening in Elberta season. It doesn't have the small "Buttons" or small undeveloped peaches at harvest like J. H. Hale. It bears heavy as Elberta, ships and handles well. Many large growers consider it the best variety in Elberta season. Albru has everything the commercial planter wants—Size, Quality and Color. Albru always commands highest market prices.

	10 each	50 each	100 or more each
9/16" 4 to 5 ft.	$1.45	$1.15	$ .95
7/16" 3 to 4 ft.	1.25	1.00	.80

THE FRENCH NURSERY CO.
CLYDE, OHIO *Since 1863*

DWARF APPLE TREES

Hardy, northern grown 1-year old trees. Grafted on Malling Stocks No. II, IV, VII and IX. Guaranteed free from insect pests or plant disease. Backed by more than 100 years of Leuthardt family experience in Dwarf Fruit Trees. Send for prices. State your needs, soil conditions and varieties desired, to eliminate any possible risk in choosing proper understock.

HENRY LEUTHARDT
Port Chester • New York

GREEN'S ALL-HYDRAULIC TRACTOR HOE

(One lever control)

Tremendous power controlled gently and easily.

Send for free literature.

HOWARD C. GREEN MFG. CO.
Portland, N.Y.

This Beautiful, Imported, Handwoven

"HORN OF PLENTY"

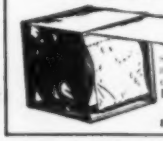
Yours for Only $1

Brimming over with fruits, nuts and berries it makes a magnificent centerpiece. Filled with rolls and biscuits, it's a truly different bread basket.

Hanging on your wall it's a colorful flower vase. Quantities are limited. Order today.

American Fruit Grower, Willoughby, Ohio

Attention Orchard Owners

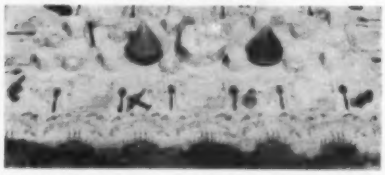


Zephyr's metal toilet paper case is perfect for outside toilets, keeps paper dry, clean, and safe from rodents, door closes automatically. Will save their cost in short time.

Postpaid $2.95 ea. or 4 for $10.00

ZEPHYR AWNING CO.
Dubois, Penna.

HAPPY BIRTHDAY



This PARTY PACK has everything for a HAPPY BIRTHDAY PARTY for your CHILD. It is suitable for children of all ages—it will serve 8 guests.

PACK consists of 99 Colorful Items of the following:—
1 Fancy Decorated Happy Birthday Tablecloth size 58 x 88.
1 Delightful Game for the entire party.
1 Box of Candles for the Birthday Cake.
AND 8 of each of the following items:
Plates, Drinking Cups with Handles, Napkins, Spoons, Forks, Candy or Nut Baskets, Fancy Party Hats, Beautiful Party Prizes, Candle Holders, Large Colorful Balloons, Party Invitations, Cards and Envelopes.
EVERYTHING to make your CHILD'S BIRTHDAY PARTY the HAPPIEST DAY of the YEAR. 99 Colorful Items ALL IN ONE LARGE BOX. **A $8.00 VALUE—SPECIAL $4.25—** Post Prepaid—No C.O.D. Please. Cash—Check—or Money Order.

You will be delighted or your money back.

THE HAPPY BIRTHDAY PARTY PACK
5139 North Clark Street, Dept. A-179, Chicago 40, Ill.

NEW GRADES

(*Continued from page* 15)

Ciders shall consist of apples below this specified minimum size which would otherwise be classified as of U. S. No. 1 quality.

Proposed Grades—As a substitution for the present U. S. No. 1 and U. S. No. 2, the fruit industry committee of Virginia State Horticultural Society has formulated specifications for three new grades designated as A, B, and C. These are similar to the present grades except for changes in the amount of defect which must be trimmed away after the apples have been peeled and cored.

The following maximum amounts of trim waste have been recommended: A—3⅛%; B—6¼%; C—12½%. These amounts were selected to provide a more accurate grading of the quality of apples for processing, and yet be reasonably easy for the inspector to use. The maximum waste of the C grade is ⅛ of the apple, the B grade involves 1/16 of the apple, and the A grade 1/32 of the apple.

Under these new grades the minimum size would be determined by agreement between buyer and seller, as with the present grades.

V. P. I. Research—To determine whether the proposed changes will benefit the industry, the department of horticulture at Virginia Polytechnic Institute initiated a research project in co-operation with several processing plants in Virginia and Pennsylvania. The department of agricultural economics at V. P. I. co-operated in the statistical phases of the work.

Apples to be used in the production of sauce were sized and graded by federal-state inspectors into 15 different lots which included three sizes: 2¼-2½ inch, 2½x2¾ inch and 2¾ inch and up, in each of the present grades and the three proposed grades. A total of nearly 8000 bushels of apples were used to insure that the results would be typical of a large processing operation.

These apples were then run through the processing plants under the usual commercial conditions. Data were secured on yield of prepared product per 100 pounds of apples, time required to trim the fruit, and comparative value of apples of different grade-size classes when used for processing.

As would be expected, the apples of the largest size and highest grade yielded the highest per cent of prepared product after the fruit had been peeled, cored, and trimmed. See Table 1. The difference in yield of prepared product between the different sizes and grades is of major importance in determining the price of apples for processing.

It is apparent that the proposed A, B, and C grades give a more accurate index of the value of the fruit than the No. 1 and No. 2 grades which involve such a wide difference in allowable waste. The waste is the defective portion of the fruit which must be trimmed away by hand after the apple has been peeled and cored.

Table 1. Yield of prepared product per 100 pounds of apples, assuming maximum waste in each grade. Yield data given in pounds.

Size	Present Grade 1	Present Grade 2	Proposed Grade A	Proposed Grade B	Proposed Grade C
2¾" and up	69.6	40.1	72.4	67.8	58.5
2½"-2¾"	65.6	36.2	68.4	63.9	54.6
2¼"-2½"	62.6	33.1	65.4	60.8	51.5
Maximum waste (trim)	5.0	25.0	3.125	6.25	12.5

The time required to remove the trim waste is an important item. The cost of removing the defective portion of low grade fruit, along with the reduction in the recovery of prepared product, makes the lower grades relatively undesirable for processing. Data on the time required to trim apples of different sizes and grades are presented in Table 2.

Table 2. Minutes required to trim 100 pounds of apples of different sizes and grades, assuming maximum waste in each grade.

Size	Present Grade 1	Present Grade 2	Proposed Grade A	Proposed Grade B	Proposed Grade C
2¾" and up	24.32	68.11	19.25	27.73	41.52
2½"-2¾"	29.61	73.40	24.54	33.02	46.81
2¼"-2½"	33.69	77.48	28.62	37.10	50.89
Maximum waste (trim)	5.00	25.00	3.125	6.25	12.50

The effect of grade and size on the price of apples for processing is, of course, of the greatest interest to both growers and processors. On the basis of data secured, and assumptions as to certain cost relationships that might exist in processing plants, the prices which could be paid per 100 pounds for apples of different sizes and grades were calculated and are presented in Table 3. The price of $2.50 per 100 pounds of U. S. No. 1 has been used as a base.

With cheaper fruit than that assumed in Table 3, the company operational costs other than for apples would become a more important portion of the total cost of the

(*Continued on page* 67)

Table 3. Comparative value of apples of different grade-size classes when used for processing. Based on a theoretical value of $2.50 per 100 pounds of U. S. No. 1 Canners, 2¾ inches up.

Size	Present Grade 1	Present Grade 2	Proposed Grade A	Proposed Grade B	Proposed Grade C
2¾" & up	$2.50	$ .00*	$3.02	$2.15	$ .67
2½"-2¾"	1.91	.00*	2.42	1.57	.10
2¼"-2½"	1.46	.00*	1.97	1.11	.00*
Maximum waste (trim)	5.00	25.00	3.125	6.25	12.50

*These grades and sizes would cost more to prepare than the finished sauce would be worth, assuming maximum waste.

NOW! READY 1958

SPRAY COMPATIBILITY CHART!

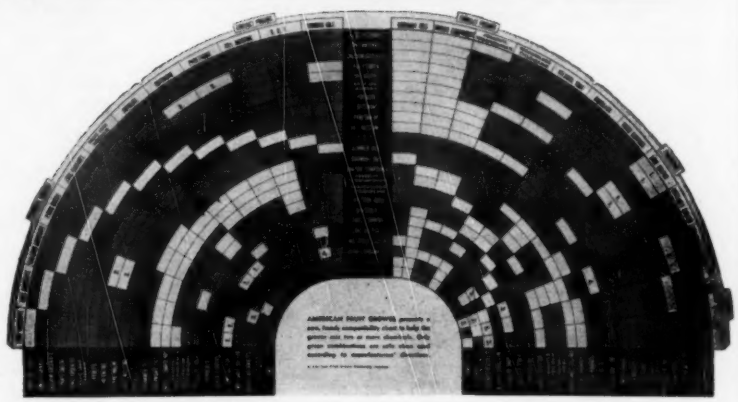
For Fruit Growers

THE ALL NEW 1958 CHART

Bigger and Better

- Compatibility of Growth Regulators
- Compatibility of Nutrient Sprays
- Many of the New Organic Chemicals and Fungicides Never Listed Before are Included
- New Larger Illustrated Chart—Easier to read

25c



WHAT'LL IT MIX WITH?

Larger and completely revised for 1958. For economical and safe spraying, the compatibility of the various organic insecticides and fungicides is a must. AMERICAN FRUIT GROWER has again produced an ingenious spray compatibility chart which tells the grower at a glance just what chemicals will mix safely. Printed in 3 colors and mounted on Bristol board, it will guide you through the spraying season ahead. Also the important companion Spray Safety Chart which has been developed to help you in the safe, sure way to use these spray materials.

Order both charts — a 50c value — for only 40c. This offer good only in U.S.A. and Canada. Quantity prices on request. Coin or your check must accompany each order.

ORDER YOUR COMPANION SPRAY SAFETY CHART TOO!

A chart every grower should own — outlining the safe, sure way to use spray materials. 5c each.

AMERICAN FRUIT GROWER
Willoughby, Ohio

Enclosed is money or my check. Send ..... compatibility charts and/or ..... companion spray safety charts to:

Name .....

Address .....

City ..... State .....

GROWERS OPPORTUNITY PAGE

Only 25¢ a word for one-time insertion; 20¢ a word per month for two-time insertion; 15¢ a word per month for four times or more. CASH WITH ORDER. Count each initial and whole number as one word. Copy must be in the 15th of the second month preceding date of issue. You can use our companion publication, AMERICAN VEGETABLE GROWER, in combination with AMERICAN FRUIT GROWER for only 5¢ a word more.

AGENTS WANTED

RUN A SPARE-TIME GREETING CARD and Gift Shop at home. Show friends samples of our wonderful new 1958 All-Occasion Greeting Cards and Gifts. Take their orders and earn up to 100% profit. No experience necessary. Costs nothing to try. Write today for samples on approval. REGAL GREETINGS, Dept. 5, Ferndale, Michigan.

BANTAMS

WHITE WYANDOTTE BANTAMS—HATCHing eggs, baby chicks, breeders, game birds, waterfowls, incubators $12.85. Circular. WILL SCHADT, Goshen, Indiana.

BEES

BEES INCREASE SEED AND FRUIT yields, require little attention. Big profits. Stingproof equipment. Factory prices save 25%. Free advice from experienced bee men. Free catalog. WALTER T. KELLEY COMPANY, Dept. A, Clarkson, Kentucky.

BOOKS

THE HOW-TO BOOK ON STRAWBERRIES. 112 illustrated pages of down to earth strawberry know-how with complete charts on diseases, pests and their control. $1.50. AMERICAN FRUIT GROWER, Box 159, Willoughby, Ohio.

FOR EDUCATION, PLEASURE AND profit, read "ADVENTURES IN BEEKEEPING." A true story. $2.00. ROBERT OGLESBY, R.R. 1, Middletown, Ohio.

BERRY BOOK: "THIRTY YEARS OF BERries." Raspberries and Strawberries. 84 pages, price $1.00 P'paid. ROY TURNER, 1525 S. Livingston St., Peoria, Ill.

FREE WHOLESALE CATALOG. 100,000 products. Tremendous discounts. ECON-O-MART, Whippany 24, New Jersey.

BUSINESS OPPORTUNITIES

FREE PICTURE FOLDER: "HOW TO MAKE $3,000 Yearly, Sparetime, Raising Earthworms!" OAKHAVEN-25, Cedar Hill, Texas.

CASH FROM SAWDUST, TIN-CANS, NEWSpapers. Over 200 methods. Instructions $1.00. CHARLES COMPANY, 12-XNT, Norwood, Ohio.

ELEPHANT GARLIC. 6 TIMES BIGGER. Sensational seller. Send $1.00 for samples. Free information. NICHOLS GARDEN NURSERY, Norpac Hwy., Albany, Oregon.

UNUSUAL OPPORTUNITY FOR YOUNG horticulturally trained man to operate as his own business, large profitable commercial orchard. Will charge rent on the basis of 25c per picked bushel of apples and 15c per picked half bushel of peaches. Man selected would bear all expenses of orchard operation. Orchard is completely mechanized and equipped with irrigation. 60 acres of apples, 30 acres peaches. Located near profitable local markets. AMERICAN FRUIT GROWER, Box 185, Willoughby, Ohio.

CIDER MILLS—PRESSES

MODERN AUTOMATIC ELECTRIC CIDER presses for roadside stands and small orchardmen. Presses 10 gallon to 15,000 gallon capacity. Everything for the cider maker, ball bearing graters, press racks, cloths, packing, valves, labels, filters, pasteurizers, bottling equipment. Write for supply catalogue. W. G. RUNKLES' MACHINERY CO., 185 Oakland St., Trenton 8, N.J.

FOR SALE—EQUIPMENT & SUPPLIES

SAVE up to 40% on—CHRYSLER INDUSTRIAL-IRRIGATION UNITS. Our own special irrigation unit costs only $1695.00, and includes CHRYSLER'S big 354 cubic inch V8 engine plus all the accessories to make it run. 6 cylinder units as low as $1295.00. Write for information. Dealer inquiries invited. Midwest Parts Corporation, Box 394, Gary, Indiana.

FRUIT TREE OWNERS—BE WISE! EQUIP your trees with our SIMPLEX re-enforcing rigging. It lasts a life time—makes weak trees strong. Prevents storm damage and carries the fruit load to maturity. Do-it-yourself plans, one dollar. We sell essential parts (patented) at rock bottom price. For full information, write L. P. CALDWELL, Box 408, Independence, Missouri.

ELECTRIC FORK LIFT TRUCK. 2,000 LB. lift capacity. 127" high lift. 36" long forks. Sitdown rider type. Equipped with non-acid, odorless long life Edison Storage Battery. With heavy duty charger. Like new. Less than ¼ of new price. HAWLEY SMITH CO., Croton Falls 4, N. Y.

New and remanufactured INTERNATIONAL HARVESTER ENGINES and POWER UNITS. Special spring clearance sale. Midwest Industrial Company, 835 No. Capitol, Indianapolis, Indiana.

GARDEN TRACTORS — 4 H.P., $109.00. Complete. Winter special. Guaranteed. Saw sickle, etc., available. UNIVERSAL MFG., 324 West Tenth, Indianapolis 2, Indiana.

1957 36-SPEED SPRAYER, 1956 SPEEDETTE speed sprayer with Hercules motor $1500.00. Model 48 Bean sprayer, P.T.O. sprayer, few Bean Royal pumps, cleaner, grader, 60,000 new crates, bomber tires. CORY ORCHARDS, Cory, Indiana.

LARGEST SIZE ENGINE-DRIVEN NIAGARA orchard duster. Used two seasons. ANDREW ORTNER, Wakeman, Ohio.

USED HARDIE SPRAYER, 300 GALLON tank, 18 GPM pump, completely overhauled. Used three seasons. GEM CITY VINELAND COMPANY, Nauvoo, Illinois.

1—29" SPEED SPRAYER WITH BOMBER tires (new) 300 gallon tank with tank refiller, condition excellent, will give new equipment guarantee. Asking $2250.00. For information, write, wire or phone VAN ATTA SEED & IMPLEMENT COMPANY, 3210 Spring Grove Avenue, Cincinnati 25, Ohio. Phone: KI 1-2051.

VENEER HOT BED BANDS — SIZES 3", 3½" and 4", all 4½" deep. FRANK L. DEANER & SON, INC., Sodus, Michigan.

CHRYSLER ENGINES AND PARTS for John Bean and Speed Sprayers plus other equipment, in stock. Immediate delivery. Midwest Parts Corporation, Box 394, Gary, Indiana.

BUY SURPLUS DIRECT FROM GOVERNment at tremendous savings, farm tools, machinery, truck, jeep, tractor, power units, hundreds others listed in our bulletin. Price $1.00. GOVERNMENT SURPLUS SALES, Box 169ARG, East Hartford 8, Conn.

BUFFALO TURBINE BLOWER SPRAYER. A-1 condition. 100 gallon tank. 32 H.P. Wisconsin engine. 10 GPM pump. Ideal for grapes, peaches, apples, berries. Used 2 seasons. N. STEPHENSON, Route 4, Independence, Mo.

FOR SALE: LITTLE USED BEAN SPEED sprayer. Reconditioned, good as new. Half price of new. R. R. CROWGEY, Wytheville, Va.

1 WARDS POWER SPRAYER WITH 200 gallon tank powered with Wisconsin air-cooled engine, spray up to 7 gallons a minute, trailer type sprayer. GEORGE STAHL, Manchester, Iowa.

JOHN BEAN MODEL 7 CONCENTRATE sprayer and duster. $700.00. K. G. CARROLL, Amelia, Ohio.

FOR SALE—SEVERAL GOOD USED POWER sprayers available. Have been traded on new Myers Concentrate Sprayers to our Ohio Dealers. Let us know your needs. WATER SUPPLIES, INC., Ashland, Ohio, distributors of Myers Power Sprayers and Water Systems.

BEAN SPRAYER WITH ROYAL 35 GALLON pump, 500 gallon tank with P. T. O., model 12 speedair unit on rear. VOLLENWEIDER ORCHARD, La Crescent, Minnesota.

FRIEND ORCHARD SPRAYER. TRUCK mounted. 300 gallon tank. Benton Harbor grader with brusher. G. E. MACKIE, 222 East 12th Street, Davenport, Iowa.

NIAGARA FOUR ROLL PEACH GRADER, brush, basket turner, tubs, lids. Make offer. CHARLES BACORN, Perkasie, Pa.

SENSATIONAL GARDEN TRACTOR. HOES between plants and rows, including strawberries. Eliminates hand hoeing. Nothing else like this. Patent 2742840. Also tills. Fantastic offer to first few inquiries. AUTO HOE, DePere 8, Wisconsin.

DOZER BLADES AND LOADERS FOR D2, D4, TD6, TD9, HD5, HD6, Cletrac A, B. Write for literature and price. WAYNE R. WYANT, New Bethlehem, Pennsylvania.

1 NIAGARA DUSTER, NOVO ENGINE, 1 speed sprayer, 1 stationary D-4 Caterpillar diesel, 1 large International truck, new engine. MILLS BROS. ORCHARDS, R. D. #2, Middletown, N.Y.

IRRIGATION PUMPING UNITS—OF ALL kinds. Self priming pumps, sprayer pumps, filter pumps, orchard sprayers. Write me your needs and save money. JIM HADDAN, P.O. Box 808, Battle Creek, Michigan.

FOWL

PEAFOWL, SWANS, PHEASANTS, GUINEAS. Waterfowl. Bantams. Thirty varieties pigeons. JOHN HASS, Bettendorf, Iowa.

HELP WANTED

WANTED — A MAN WITH FRUIT GROWing experience and college training. Position requires man to do some work in the orchards, supervision and office work. Write Box 182, AMERICAN FRUIT GROWER, Willoughby, Ohio.

ORCHARD MAN TO MANAGE ON SHARES. 1700 apple trees, 1200 peach trees, modern roadside market on national Highway #50. 25 miles from Cincinnati. Drawing account of $250 per month. Modern house. Must be willing to work. DR. G. P. WEAVER, Route 3, Box 142, Batavia, Ohio. Phone Ulysses 2-1811.

INVENTIONS WANTED

INVENTORS—DON'T SELL YOUR INVENtion patented or unpatented until you receive our offer. Write COWGILL, Box 298, Marion, Ohio.

ARE YOU INTERESTED IN OFFERS FROM reliable manufacturers for your invention? Patented, unpatented. HARVEY ASSOCIATES, Dept. 7A, Cambridge, Maryland.

MISCELLANEOUS

BANANA PLANT, GROWS ANYWHERE—indoors, outdoors. $1.50. Postpaid. P. SULEN, Ladylake, Fla.

ASPARAGUS ROOTS — TWO YEAR ROBERTS strain. Sixteen dollars per M. BUCKLIN FRUIT FARM, Lincroft, New Jersey.

WHY HAVE GREY HAIR? GUARANTEED liquid restores former color in days. Six months supply $2.00 postpaid, FENDRICKS, 114 N. 6th Street, Allentown, Penna.

TREE RIPENED ORANGES, GRAPEFRUIT $9.00 bushel prepaid. PETE SULEN, Ladylake, Florida.

BERRY BOXES, BROWN KRAFT, FIBREboard. Quarts $14.50, pints $12.50 per M. Freight collect. RONALD PENNINGTON, Rockford, Michigan.

HEN AND CHICKS (SEMPERVIVUM). Five varieties, two of each $2.00 prepaid. WERMTER, Route 3, Brainerd, Minn.

SUBSCRIBE TO GOVERNMENT SURPLUS Weekly, lists all sales. Buy Jeeps, tractors, etc., direct from government. Next 10 issues $2.00. GOVERNMENT SURPLUS, Paxton, Ill.

OF INTEREST TO WOMEN

SEW APRONS IN YOUR HOME, PROFITably. Write ADCO, Bastrop, Louisiana.

QUILTING? REMNANTS? NINETEEN varieties. Free sample. Three yards nylon $1.00. Postpaid. RAINBOW, Estill Springs, Tenn.

WAXES FLOORS WITHOUT "WAX". NEW invention. No more floor wax to buy. Sensational seller. Samples sent on trial. KRISTEE 117, Akron, Ohio.

WEAVE RUGS—MAKE GOOD PROFITS! No experience necessary! FREE catalog, sample card, and low prices on carpet warp, rug filler, looms, parts, inexpensive beam counter. If you have loom—give make, weaving width please. OR. RUG COMPANY, Dept. 3877, Lima, Ohio.

SEND US RAW WOOL FOR BLANKETS. Details free. WEST TEXAS WOOLEN MILLS, 439 Main, Eldorado, Texas.

ORCHARD FOR SALE

APPLE ORCHARD. 100 ACRES. YOUNG. Best varieties. Vigorous trees. New buildings. Cold storage. Four water systems. Equipment. Fine location. Health causes sale. Ask details. ELLENWOOD ORCHARDS, Carpenter, Ohio.

900 ACRES IN BEAUTIFUL SOUTHEASTern Pennsylvania. 400 acres in peaches and apples, 200 acres general farm crops, 300 acres meadows and woodland. Adequate water, good buildings, excellent roads, nearby good markets. Suitable for dairying, general farming or orchard enlargement. Part could be developed for a shooting preserve. Box 184, AMERICAN FRUIT GROWER, Willoughby, Ohio.

ORCHARD FOR SALE ABOUT 1400 TREES Golden, Red Delicious, McIntosh, etc. 50 acres. 9-room house and other buildings. Cold storage, ALBERT HAESSIG & SON, Wallkill, N.Y.

PATENT ATTORNEYS

INVENTORS! WHEN YOU ARE SATISFIED that you have invented something of value, write me, without obligation, for information as to what steps you should take to secure a patent. Write PATRICK D. BEAVERS, registered patent atty., 813 Columbian Bldg., Washington 1, D.C.

PLANTS

GREAT NEW CANADIAN BERRIES—1958 catalogue lists four. Also for sale with full U.S. distribution rights, black raspberry with very small seeds and very late strawberry. EDWARD LOWDEN, Ancaster, Ontario, Canada.

RABBITS

RAISE ANGORA, NEW ZEALAND RABBITS or mink on $500 month plan. Free details. WHITE'S RABBITRY, Delaware, Ohio.

SITUATIONS WANTED

YOUNG MARRIED MAN SEEKS POSITION as working manager or foreman for apple orchard; experienced; excellent references. Write AMERICAN FRUIT GROWER, Box 179, Willoughby, Ohio.

EXPERIENCED AMBITIOUS MAN DESIRES opportunity with large orchard business. Can furnish references. AMERICAN FRUIT GROWER, Box 180, Willoughby, Ohio.

EXPERIENCED FRUIT GROWER, AGE 37, married, desires employment in leading position. Prefers Eastern states. References available. Write AMERICAN FRUIT GROWER, Box 183, Willoughby, Ohio.

TRADE MARKS

NATIONAL TRADE MARK COMPANY, Munsey Building, Washington 4, D.C.

WANTED—EQUIPMENT & SUPPLIES

WANTED: USED FREON COLD STORAGE equipment for 4,000 to 6,000 bushel capacity. FRANCIS KENNEDY, Jolo, West Va.

APPLE GRADING MACHINE: TO MAKE 6 to 10 sizes with 700 bushel day capacity. Prefer Wayland model with return flow belt. Give full description, sketch. N. STEPHENSON, Route 4, Independence, Mo.

BEAN MODEL 15 RC AIR SPRAYER OR equivalent with or without large sprayer in good condition. CRANGUYMA FARMS, Long Beach, Washington.

WANTED—ORCHARD TO BUY

WANTED — ORCHARD WITHIN 100 MILES of Cincinnati. Send details and price to Box 186, AMERICAN FRUIT GROWER, Willoughby, Ohio.

STRAWBERRIES. Newest Varieties—Earlidawn, Surecrop, Redglow from U.S.D.A.; Jerseybelle from New Jersey. Allen's 1958 Berry Book tells about these and other leading varieties and how to grow them. Copy free. Write today. **W. F. ALLEN CO., 105 Pine Street, Salisbury, Maryland.**

OPPORTUNITY ADS

BUY, SELL AND TRADE—Readers and business firms will get top advertising value at low cost from AMERICAN FRUIT GROWER "Opportunity Ads." These classified ads are widely read, widely responded to by AMERICAN FRUIT GROWER'S high-income readers throughout America. Our classified advertising department will run your ad under any heading and will guarantee correct insertion.

RATES—For one insertion, 25c per word. For two insertions, 20c per word per month. Four insertions, 15c per word per month. Count each initial or whole number as one word. CASH WITH ORDER. You can use our companion publication, AMERICAN VEGETABLE GROWER in combination with AMERICAN FRUIT GROWER for only 5c a word more.

AMERICAN FRUIT GROWER reserves the right to reject or alter any copy which does not merit its standards. Ads will be inserted in first available issues unless preferred month is specified by advertiser. Closing date is first of month preceding publication.

AMERICAN FRUIT GROWER
WILLOUGHBY, OHIO

NEW GRADES

(*Continued from page 64*)

applesauce, causing size and grade differentials to become relatively greater than they are under the $2.50 price situation. With higher priced apples the company operational costs other than for apples would become a smaller portion of the total costs for applesauce, and the price differentials for grade and size would become relatively less.

What the New Grades May Accomplish—The proposed new grades for apples for processing would provide a basis for buying and selling apples at prices which would be more representative of their real value than has been true with the present grades. The total investment in apples by processors would presumably remain the same under either the present or proposed grades.

If the proposed changes are approved, the grower who produces high grade fruit would receive more for his crop. The grower who produces low grade apples would receive less for his fruit. The cost to the processor of the prepared apples in a case of sauce must, of course, be the same regardless of the size or grade of the apples from which it was manufactured.

The adoption of the proposed changes in grades may not necessarily allow a complete elimination of differentials now existing in prices between tree run and table sort apples as was hoped by some growers. The narrower tolerances of the proposed grades would reduce the variation in trim waste between tree run and table sort apples, and thus reduce the need for the differential price.

Some table sort apples have to be held either in common or cold storage for a period after they have been graded before they are processed. The question still remains as to whether table sort apples deteriorate at a more rapid rate than tree run apples of same grade. If this occurs a differential in price would be called for, but it would be reduced from present level. — THE END.

FOR YOUR CONVENIENCE

When changing your address, or in any matter pertaining to your subscription, please send your address label from your last copy of AMERICAN FRUIT GROWER. Having the address label, together with the information it contains, enables us to give you quick, efficient service. Send your address label to: Betty Hindman, Subscription Department, AMERICAN FRUIT GROWER, Willoughby, Ohio.

DWARF FRUIT TREES

Ideal for home gardens, require little space, full sized fruit, begin fruiting 2nd or 3rd year. Enjoy delicious fruit from your own trees. We have dwarf peach, apple, pear and new North Star cherry. Also new grapes, berries, nut trees, fruit trees, blueberries, strawberries, shade and ornamental trees. Miller's color catalog FREE.

J. E. MILLER NURSERIES
905 W. Lake Road — Canandaigua, N.Y.

FRUIT TREES

Finest quality, fully guaranteed. Carefully graded with fibrous root system. Whole root understocks.

Apples — Cherries — Peaches
Pears — Prunes — Apricots

Also dwarf apples on Malling stocks

New Trailblazer. Ornamental fruiting plum. Beautiful two tone red and green foliage—red fruit. Excellent to eat or for jelly. Gorgeous popcorn white flowers.

SEAL OF QUALITY

RICH & SONS NURSERY
Route 1, Hillsboro, Oregon

NEW! VIRUS-FREE STRAWBERRY PLANTS

Available in all leading varieties. Newest blight-resistant pear introductions Ayres, Hoskins, Moores, Dabney. Latest U.S. Dept. of Agriculture peach introductions. Complete line of nursery stock. Write for FREE color catalog and $2.00 FREE bonus information.

TENNESSEE NURSERY COMPANY
Box 11, Cleveland, Tennessee

AMERICAN-FRENCH HYBRID GRAPES
Eighty-four varieties
Circular
C. A. Stoughton Vineyards, Fredonia, Kansas, Rt. 4

SHIVERS STRAWBERRY PLANTS

Write for catalog, fully describing all varieties, with best methods of growing them. Satisfaction Guaranteed.

J. H. SHIVERS, Box A-582, Allen, Md.

FINEST QUALITY FRUIT TREES

Best varieties Peach, Apple, Pear, Plum, Cherry, Apricot and Nectarine Trees. Jumbo size give quickest best fruiting. Let us send you FREE Catalog. Write today. Largest grower of TRUE TO NAME trees for 74 years.

HARRISONS' NURSERIES, Berlin, Maryland

STRAWBERRIES

are Ideal family income projects. One-tenth acre yields 650 - 900 quarts. Allen's Berry Book tells best varieties and How to Grow Them. *Free copy. Write today.*

W. F. ALLEN COMPANY
105 Evergreen Ave., Salisbury, Maryland

Yours FREE!

KELLY'S COLOR CATALOG of DWARF FRUIT TREES

Shrubs, Shade Trees, Perennials, etc.

Dwarf Peach, Cherry, Apple, Pear trees, give huge crops from small land area . . . and they're so EASY to care for and harvest! Over a dozen *guaranteed* varieties. Also standard trees, grapes, berry plants, flowering shrubs, perennials, fast-growing shade trees, etc. SAVE by buying DIRECT from nursery in business over 78 years. No obligation. Send coupon now.

KELLY BROS. Dept. AFG-3, Dansville, N. Y.

Rush me FREE the new Spring Color Catalog of guaranteed, hardy Dwarf Fruit Trees, Shrubs, Berry Plants, etc. (Regular Customers: your '58 catalog is on the way.)

Name .....
Address .....
City ..... State .....
Enclose 50¢ West of the Mississippi

American Fruit Grower

• Fruit for Health •

RICHARD T. MEISTER, *Editor*
H. B. TUKEY, *Associate Editor*

Can Railroads Get Back on the Track?

THE railroads are the backbone of our transportation system, a point of especial significance to vegetable and fruit producers. Trucks now carry more than 50% of perishable shipments, but it would be folly to think that trucks would ever handle the whole deal. And from the viewpoint of heavy industry and defense, the railroads fulfill a function no other carrier can perform.

Why have the railroads fallen into ill times? They have been squeezed by inelastic governmental policy on one side and by inelastic union policy on the other. They have had no room to maneuver in adjusting to the competition from trucks and air lines.

The railroads cannot establish their own fares nor can they discontinue certain schedules as they see fit. The railroads must pay for their own right of ways and stations, whereas trucks drive over free roads and airlines use terminals provided by local taxes.

Unions persist in forcing on the railroads a working force no longer needed because of mechanical improvements in train operation. Stringent seniority rules make it difficult for younger, more enthusiastic workers to find jobs of responsibility.

The Interstate Commerce Commission must loosen up its thinking and use a little imagination in dealing with railroad problems. The old approaches won't do now. It's time to take a good straight look and give the railroads some freedom of action. It's quite possible they can work their own way out of their difficulties if they are released from their ball and chains.

Liberty Hyde Bailey

HORTICULTURISTS everywhere should pause, if only for a moment, on March 15, to pay tribute to the memory of Liberty Hyde Bailey, who was born just 100 years ago on March 15, 1858, at South Haven, Mich.

There is no other individual in American horticulture who quite compares with Bailey — a tremendous figure of personality, vigor, and real genius. He moved across the American horticultural stage beginning in early childhood and continuing until his death on Christmas night in 1954 at the age of 96 years and 9 months at his home in Ithaca, N. Y.

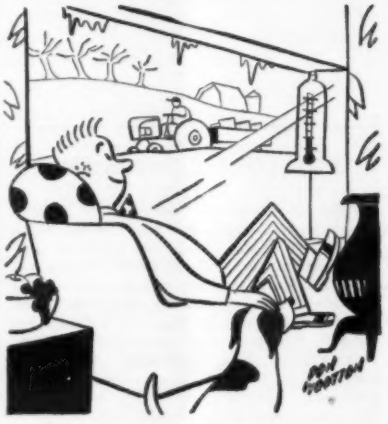
He held the first chair of horticulture and planned the first horticultural building in an institution of higher learning in America—both at the then Michigan Agricultural College in East Lansing.

From Cornell University, to which he went in 1888, his writings, his speeches, and his students moved out to make a tremendous impact upon the world.

He emphasized plant breeding and the improvement of varieties, saying that ultimately there must be varieties developed for every local region. He preached the importance of research. He sought always to make something better, whether it was a plant material or a method. His standards were high, and he literally lifted agriculture wherever he touched it.

But in all of this he was the simple, direct, humble lover of plants, of man, and of life—ever the servant of all.

Fruit Growing is Such Fun!



Fruit Talk

There is a variety of **peach from Argentina** with firm, almost woody flesh—hardly edible but reminding one that someday plant breeders may **eliminate** the present **woody portion** of the peach, namely, the **pit.**

Russia reports the response of apple and pear trees to **foliar sprays of superphosphate** made during July and August.

C. J. Alley, of California, finds that a skilled man can make between **700** and **1000 grape grafts an hour** by employing an ingenious special motor-driven series of 8-inch saws separated by aluminum disks or spaces in order to tongue and groove the stocks and scions for excellent fit.

Rolland Reitz, president of **New York State Horticultural Society,** quotes a Pennsylvania Dutch adage: "We get too soon old and too late smart," and then comments that, "Only by strong co-operative action can we compete with the mass buying techniques of our present day economy."

The **trend in the East** is more and more towards **selling direct** to retail outlets.

Wine manufacturers in France and Australia report that **grapes** sprayed with captan two weeks before harvest failed to ferment normally.

The amount of head space in cans of **frozen peaches** is directly associated with **browning** and **loss of ascorbic acid,** due to presence of oxygen in the space.

If you have ever wondered whether **inspection of incoming airplanes** for foreign plant materials is a waste of time, you will be interested to know that 13,892 of 18,859 planes arriving at Idlewild Airport between October 1, 1956, and October 1, 1957, **carried plant material.**

The principle of **spray drying** for producing powdered milk has been extended by a **French concern to soft fruits,** such as the raspberry, strawberry, currant, gooseberry, and even apple, to produce a **powder with natural flavor** which can be incorporated directly into various fruit products both in the home and in industry.

Not many areas can boast of 100 years **of peach growing** by a **single family. Canada** offers the **Axford family** of Elgin County, near St. Thomas, Ontario, beginning with Richard Axford and continuing through son Richard Axford, grandson Fred, and present great grandson, Harry.

A company has been formed in **France** to launch and advertise foods treated by **radiation for preservation.**

Coming Next Month

- How Wind and Spacing Affect Dwarf Apple Performance
- Tree Nutrition and Its Relationship to Baldwin Spot
- Verticillium Wilt in Sweet Cherries
- Peach Pruning—Cut Heavy or Cut Light?
- Hand vs. Spray Thinning of Prunes
- Springtime Jobs in the Vineyard
- Cultural Practices with Southern Pecans
- The Fruit Areas of America: Southern California

CHEVY'S THE BLUE-RIBBON BUY *in the* LOW-PRICE FIELD!

Once you've compared the new Chevrolet with other low-priced cars, you'll agree it's the cream of the crop. Yet, with all its styling and engineering advances, Chevy's priced right down at the bottom of the ladder!

Brookwood 4-door station wagon with Body by Fisher.
Chevy's the only car in its field with Safety Plate Glass all around.

The longer you look, the more you'll find to like about this new Chevy. It's the only honest-to-goodness *new* car in its field. Yet, with all its stand-out style and outstanding engineering developments, it's priced to go beautifully with your budget.

Any way you figure it, Chevrolet winds up ahead by a country mile. Every model's spanking new to the eye, with an all-new Body by Fisher—lower, wider and nine lively inches longer. Every Chevrolet's new clear through, too, with such advances as the all-new Safety-Girder frame—X-built for extra rigidity. And the ride levels out the roughest road—with a choice of all-new Full Coil suspension as standard or a real air ride (delivered without delay) as an extra-cost option.

Make it a point to get over your Chevrolet dealer's way soon. He's got these and a carload of other new features to show you, like the new Turbo-Thrust V8—another extra-cost option that loves to shrink the miles out where they're long and lonesome.

Once you've been behind the wheel, you'll agree there's nothing else as new or nice near Chevy's price! . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

CHEVROLET

Cut spraying time . . . get thorough coverage

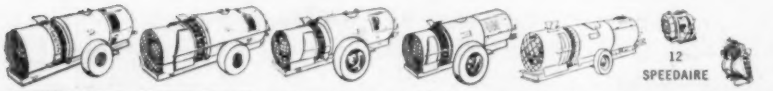
with a 1958 John BEAN SPEED SPRAYER

You'll save time and money with John Bean's exclusive air handling design and efficient, one-man operation that lets you get over your acreage faster with complete spray protection. No other air sprayer combines the important features of power-to-spare engines, high air volume with medium velocity delivery, greater fuel economy and the ease of spray pattern control to fit your specific spraying conditions.

For even greater rate-of-work and spraying protection, you will spray concentrates with John Bean Speed Sprayers and save water hauling trips, get quicker drying of spray materials and sure protection against all insects and diseases.

Proper size is important, too. Undersized units are overworked, don't get the job done in time. Oversized sprayers loaf, increase your operating costs. With John Bean's complete line, you select from 7 Speed Sprayer models and attachments and choose the Sprayer exactly suited to your requirements. Ask your John Bean dealer to demonstrate.

Write today for your FREE illustrated copies of "What You Should Know About AIR-CARRIER SPRAYING OF ORCHARDS" and the new 1958 Orchard and Grove Catalog.

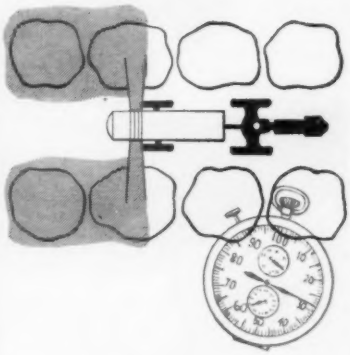


THE COMPLETE ORCHARD SPRAYER LINE

fmc FOOD MACHINERY AND CHEMICAL CORPORATION

John BEAN LANSING 4, MICHIGAN SAN JOSE, CALIFORNIA

Division of Food Machinery and Chemical Corporation



How long opposite each tree — to get the thorough spraying coverage you need?

That's "rate-of-work," the true measure of spraying efficiency that's essential to your labor costs and being able to spray "on time." With every John Bean Speed Sprayer you get the highest volume of air per horsepower consumed — effective, evenly distributed spray coverage at maximum tractor speeds — the greatest rate-of-work capacity of any air sprayer.